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Tennessee's eBird Coverage: Filling the Gaps

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Since its founding in 2002 the online data sharing project eBird has seen explosive growth in participation. Users of eBird have contributed over 85,000 checklists from Tennessee to the database, encompassing more than 390 species of birds. These data represent recent observations, with dozens or even hundreds of new Tennessee eBird checklists being submitted every day. In addition, there have been large-scale projects to enter historical Tennessee data into eBird, with some coverage now dating back to 1925.

Though Tennessee as a whole has received excellent coverage in the eBird data, this coverage is highly variable from place to place within the state. Some counties are represented by over 10,000 eBird checklists; others are covered by fewer than 10. Many factors contribute to this thousand-fold range in eBird coverage between counties. Human population density is key as is the presence or absence of favored birding "hot spots" within a county. In some cases it is a function of whether or not there are one or two individual birders within a county who are active participants in eBird. Even with hundreds of participants and tens of thousands of submitted checklists statewide, a single motivated observer can still make a substantial contribution to the picture of Tennessee's avifauna represented by the eBird data.

An overview of the nature of eBird data and the records that are generated from it will be helpful in summarizing this county-by-county variability and especially in pointing out the weak spots where a few observers could make a substantial difference.

The fundamental data unit in eBird is the checklist. This is a list of species observed (optionally with estimated numbers of individuals) at a particular location on a specified date and time period. A checklist can represent a traveling count taken over a particular distance, or it can represent a stationary count of birds noted from a fixed location. A very important piece of information on each checklist is whether or not it is a complete list of all species observed and identified. This determines whether the negative data (species not observed) are true absences, or just missing data points that were not noted one way or the other.

Many different types of summary data/outputs/records are available interactively from eBird. Lists, graphs and maps can be generated presenting the observations at different scales over time and space. One of the most powerful overviews of the data for a locality is the seasonal bar-graph checklist. This shows the abundance of a species at that locality for every week of the calendar year, expressed as the fraction of all complete eBird checklists for that time and place on which that species was reported. Though it is a fairly coarse overview, the bar graph checklist for a given area delivers much information, both about the seasonality and abundance of the birds of that place and the extent of eBird coverage for that locality.

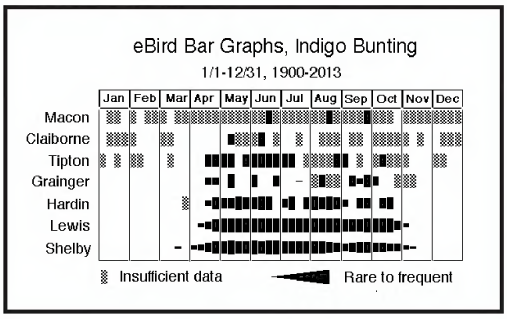

Figure 1

Examples of the eBird seasonal bar graph for the Indigo Bunting (*Passerina cyanea*) for seven different Tennessee counties are compared in Figure 1. Note that in each case, stippled weeks are those for which there is no data – no complete eBird checklists have been submitted for that county during that date range. Blank weeks indicate that there are data but no Indigo Buntings are included on any of the complete checklists. Solid bars show that Indigo Buntings were reported in the county during that date range; the thicker the bar, the larger the fraction of checklists that contained the species.

I chose the Indigo Bunting because it is a widespread and abundant species across Tennessee, with roughly similar seasonality in its occurrence in most areas. Hence, the differences in the bar graphs among the counties mostly reflect the differences in eBird coverage. The seven counties chosen span the range from one of the counties with the least eBird data (Macon) to that with the most data (Shelby). The other five counties represent a spectrum of coverage between these two extremes.

The Macon County bar graph establishes little other than that the species occurs in the county. One might attempt to infer seasonality from this graph, but in the absence of any other information it would be a tenuous conclusion as only eight weeks are sampled at all. The Claiborne County bar graph includes more data, with about half of the weeks including a complete eBird checklist. Still, we can say little more other than that Indigo Buntings do occur there.

With the Tipton and Grainger County bar graphs we begin to get a better picture of the species' seasonal pattern of occurrence. Still there are many gaps in the data, and it is difficult to say much more than that the bird is a summer resident, rare or absent in the winter. The Hardin County bar graph indicates better resolution, with data for every week save one. Note also that some of the narrow bars appear, indicating weeks that have large enough numbers of checklists that the uncommon species are likely to be detected as well, not just the most common ones. Still quite a bit of "noise" is evident, and there are gaps in the summer that are almost surely due to random sampling variation, not a real absence of the species.

The Lewis County bar graph fills in the full seasonal pattern with a continuous solid summertime bar. It also shows incremental arrival of the species, on average, in spring and fall. And finally Shelby County, with 10,000 checklists distributed throughout the range of a year, shows a detailed pattern of seasonal abundance. The rare early arrivals and late departures are both detected. The lull in apparent numbers in late summer is also clearly resolved. This dip was only hinted at in the Lewis County bar graph.

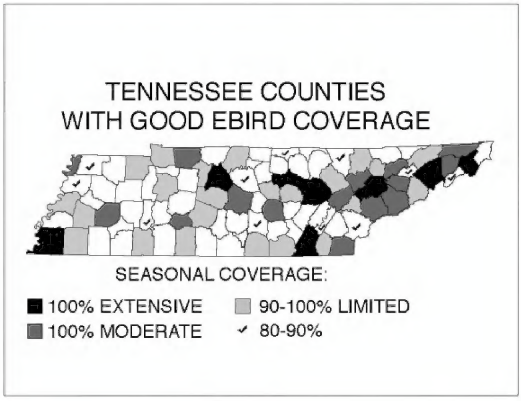

Figure 2

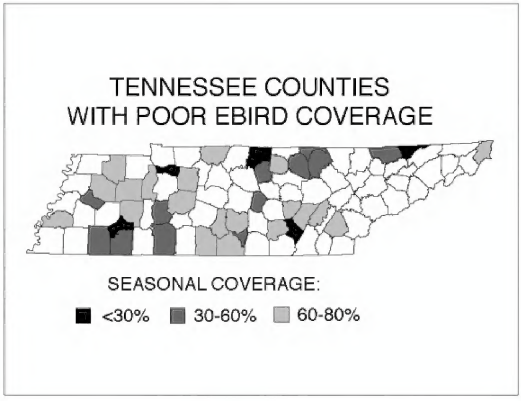

Figure 3

Figures 2 and 3 summarize the extent of eBird seasonal coverage for each Tennessee county. The categories used correspond to the examples shown in Figure 1. The "percent coverage" is the fraction of eBird seasonal "weeks" that contain at least one complete eBird checklist. For the counties that have data for 100% of the weeks in Figure 3, I further subdivided them (somewhat subjectively) into limited, moderate, and extensive coverage. The "limited" counties still show substantial noise in the data, such as weeks during which common species that are probably present and numerous in that time frame have not been reported, and poor coverage of less common species. The "moderate" coverage counties are similar to the example given for Lewis County, with good seasonal coverage but still significant random noise evident. Many less common species are noted, but their seasonal patterns are not well resolved. Counties noted as having "extensive" coverage resemble the example given for Shelby County. Most species known to occur in the county are reported, and there is good seasonal resolution for both the common birds and the rare species.

The coverage pattern roughly reflects the location of population centers and well-covered birding hotspots. Still, Figure 2 shows that there are many poorly covered counties quite close to major cities. Some of the "black hole" counties with very little data adjoin major metropolitan areas, such as Macon and Sequatchie. Conversely, some rural counties have quite good coverage. As mentioned above, this is often the result of one or two active observers who have contributed data to eBird for these areas on a regular basis. Most of the

Lewis County data, for example, is from one observer.

Individual observers can make a substantial contribution to expanding our ongoing picture of seasonal and spatial distribution of Tennessee birds by participating in eBird. A single observer who decides to "adopt" one of the less well-covered counties can move it from poor coverage to good coverage in a single calendar year. All that is necessary is to visit the county once a week, and report the results to eBird.

While all data are welcome and valuable in eBird, certain types of observations are the most useful. The general guidelines for better quality eBird data are:

- Complete lists: report all species observed, not just highlights.
- Effort-based lists: Report distances, times, and durations.
- Single-party lists: Observations from a single observer, or group of observers who were birding together in close proximity.
- Estimated or counted numbers for all species: No "X," even for abundant widespread species. A very rough estimate is better than an "X."
- Smaller areas, shorter times: Traveling counts of less than eight kilometers and stationary counts of less than one hour are statistically the most useful.

An observer who is visiting a poorly-covered county can get the most value out of his or her visit by dividing the day's lists into shorter segments for particular areas. Rather than one total for the entire 37 kilometer trip, five separate lists covering 8 kilometers each can be compiled and submitted; or specific lists can be kept for particular locations, and then all the additional birds seen between these locations could be compiled into one long traveling count. Though this final list will be less valuable, it is still valid data, and will fill in what was missed at the specific locations for a complete record of the day's birding. Even if it consists mostly of roadside Starlings (*Sturnus vulgaris*) and House Sparrows (*Passer domesticus*), eBird data are useful for tracking these nuisance species as well. For example, eBird vividly documents the explosive expansion of Eurasian Collared-Doves (*Streptopelia decaocto*) in North America.

The growth of eBird has opened previously unexplored territory in our ability to know what is going on in the world of birds, day-by-day, right up to the present. Though some users do view eBird primarily as a way to share information about rare species, this is not its greatest contribution. The power to track the common "everyday" birds in real time and across the continent has been transformative. Irruptions and migrations can be visualized as they happen. The population shifts in those common "backyard" birds, the foundations of our continental avifauna, appear with a spatial and temporal detail that was previously unimaginable. The expansion of eBird coverage into every nook and cranny of Tennessee will help add even more detail to this revolutionary picture.

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FIRST DOCUMENTED TYPE 1 RED CROSSBILL IN TENNESSEE

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Red Crossbills (*Loxia curvirostra*) are resident in the southern Appalachian Mountains and evidence of breeding has been documented in east Tennessee (McNair 1988; Nicholson 1997). Red Crossbills were considered by Robinson (1990) to be regular winter and summer residents in east Tennessee. Considerable morphological and vocal variation exists among Red Crossbills (Adkisson 1996). Ten distinct types (Types 1-10) have been described in North America based primarily on differences in flight call; these types also exhibit small variations in bill morphology, ecology and genetics (Young 2011). Some have suggested that these types may represent distinct species. Type 1, 2, and 3 Red Crossbills have been reported to occur in the southern Appalachian Mountains (Adkisson 1996). Type 10 was recorded in the southern Appalachians during the winter of 2012-2013 (Young, personal communication) when irruptions of several species of finches were reported throughout North America, including six Types of Red Crossbill (Brinkley 2013). Type 3 is represented by only a few recordings from the southern Appalachians; most were recorded during the winter irruption of 2012-2013 (Young, personal communication). Type 3 flight calls were recently recorded on the Tennessee-North Carolina border in the Great Smoky Mountains National Park on 23 June 2013 according to a report in the newsletter of the Knoxville chapter of the Tennessee Ornithological Society (Nelson 2013).

Identification was made based on close observation (within 10m) in good light and clear weather conditions at bird feeders and surrounding trees at the Caton property. The crossbills came to the feeders in groups and allowed close approach. Optical equipment included Vortex Type 1 has been described as an "Appalachian" crossbill because most of the sightings/recordings of Type 1 have come from the central and southern Appalachian Mountains, where it takes advantage of cone crops from a variety of conifers (Young 2011). Type 1 Red Crossbills feed primarily on Red Spruce (*Picea rubens*) during the summer, Eastern White Pine (*Pinus strobus*) during fall and winter, and hard-coned pines during spring; they will often come to feeders during late winter-spring when cone seed availability is often at its lowest (Young 2011). Type 1 Red Crossbill calls have been recorded at Bald Knob Ridge, North Carolina (Young 2011), which is about 27 kilometers (17 miles) from the site of the current report from Unicoi County, Tennessee, and evidence of breeding Type 1 Red Crossbills has been reported at Roan Mountain, North Carolina (Groth 1988), which is about 24 kilometers (15 miles) from the site in Unicoi County. Differentiating Type 1 Red Crossbills is a challenge because Type 1 and Type 2 flight calls are very hard to discern by ear, and they are best identified with certainty by audiospectrographic analysis (Young 2012). To our knowledge, flight call types of Tennessee populations of Red Crossbills have not been previously reported.

On 4 May 2011 David M. Caton of Erwin, Tennessee contacted Bryan Stevens, columnist

for The Erwin Record (Erwin, TN), to report that as many as 4 Red Crossbills had been coming to his feeders beginning on 20 April 2011. The feeders are located on private property near the Cherokee National Forest in Unicoi County, Tennessee at an elevation of 756 meters (2480 ft) above sea level. The property is less than 8 kilometers (~4.8 miles) from Unaka Mountain, which is a peak in the Unaka Range of the southern Appalachian Mountains. At an elevation of 1511 meters (4957 ft), Unaka Mountain and other high elevation areas of the Unaka Range support stands of Red Spruce, among other conifer types used by Type 1 Red Crossbills. Twenty Red Crossbills were reported by Brookie and Jean Potter at the feeders on 9 May 2011. On 10 May 2011, at least 13 Red Crossbills were observed by David Kirschke, including 4 adult males, 3 first/second year males, and 6 females. A high count of 32 Red Crossbills was reported in mid-May 2011; the last sighting of Red Crossbills at the feeders was a male/female pair on 2 June 2011 (D. Caton, personal communication). The feeders had to be taken down after that date because of damage by bears.

Figure 1. Adult male Red Crossbill, Unicoi County, Tennessee, 10 May 2011. (Photo by David Kirschke)

Identification was made based on close observation (within 10m) in good light and clear weather conditions at bird feeders and surrounding trees at the Caton property. The crossbills came to the feeders in groups and allowed close approach. Optical equipment included Vortex Viper 10x42 binoculars. They were also well documented with photographs (Figure 1). These medium-sized finches were identified based on distinctive curved mandibles, which were crossed at the tips; coloration; dark flight feathers; and short, notched tail (photograph). The absence of bold white wing bars excluded White-winged Crossbill (*Loxia leucoptera*). Several references were consulted to determine age/sex (Sibley 2000; Howell 2010; Adkisson 1996).

On 18 May, Kirschke was contacted by Matthew A. Young, crossbill researcher at Cornell Lab of Ornithology (Ithaca, NY), asking if any audio recording were available for these birds. On 19 May 2011 audio recordings were made of flight calls by Caton using his cellular telephone (Apple iPhone 3G). The flight calls were analyzed by Young using Raven sound analysis software (Version 1.3, Cornell Lab of Ornithology) and determined to be Type 1 by audiospectrogram. Type 1 and 2 call spectrograms are dominated by a down-sloping component with the distinction that spectrograms of Type 1 calls have an initial up-sloping component for most individual calls in a series (Young 2012), which can be observed in the spectrogram of the recording of the Red Crossbill in Unicoi County. This represents the first documentation of Type 1 Red Crossbills in Tennessee. Further study is warranted to document the types of Red Crossbills that occur in Tennessee and their distribution. We encourage observers to record flight calls, if possible, when Red Crossbills are encountered.

Acknowledgments. We thank David M. Caton for reporting the Red Crossbills and submitting recordings as well as hosting many observers on his property. We also thank Richard L. Knight and Fred J. Alsop III for their review of this report.

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Confirmation of Type 3 Red Crossbill in the Great Smoky Mountains National Park

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As many as 10 "call types" of Red Crossbill (*Loxia curvirostra*) can be found across North America (Groth 1993, Benkman 1999, Irwin 2010). Each "call type" is identified on the basis of its flight call, which also can be given by perched birds. Call types of Red Crossbills are range specific (Young 2012) with many of them favoring specific conifer species in certain areas of North America (Benkman 1993). Where cone-bearing conifers (spruces, pines, western hemlock and Douglas fir) are found is where you will often find them – the Pacific Northwest is where conifer diversity is highest, and therefore where crossbill diversity is highest too. There is much overlap in the ranges of crossbill call types out west, but here in the southern Appalachians we are usually limited to Type 1 with occasional Type 2 (Young et al. 2011). In the southern Appalachians crossbills tend to be found in the higher elevations where their food source is located, usually above 1300m in summer. In winter they can be more common foraging at lower elevations and are sometimes found visiting bird feeders where they prefer sunflower seeds. They are an irruptive species, meaning when a food source has been depleted they will move to a different area in search of an adequate food supply; however, type 1 appears to be quasi-resident in areas of the southern Appalachians (Young et al. 2011). In some years very few are seen, and in some years, like winter of 2012-13, there was a good chance of seeing and hearing them whenever higher up in the mountains where a great diversity of cone-bearing conifers can be found.

On 23 June, while hiking the Appalachian Trail between New Found Gap and the Boulevard Trail, I heard a group of Red Crossbills in flight coming from the Tennessee side to the North Carolina side. They were seen only in flight, but I was able to record their calls, which were later confirmed as Type 3 Red Crossbill by Matthew Young of the Cornell Laboratory of Ornithology. These recordings can be found at www.xeno-canto.org/139642 and www.weno-canto.org/1396421.

To date there have been only three reports of Type 3 Red Crossbill in the region, and all were during the late fall/winter months of November, January and early March. We know of no reports from summer months. Only one type 3 had ever been reported in the southern Appalachians prior to the type 3 flight of 2012-13 (Young personal communication).

As usual, there were plenty more Type 1 Red Crossbills here during the 2013 summer. I've not found any nests or dependent juveniles over the years, but since type 1 Red Crossbills are fairly typical in the southern Appalachians most summers, it's likely just a matter of being persistent enough to find one.

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Harlequin Duck in Northeast Tennessee

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A female Harlequin Duck (*Histrionicus histrionicus*) was discovered in the afternoon of 31 January 2013 on the South Holston River, in Kingsport, Sullivan County, Tennessee. It was found by Brookie Potter and Jean Potter as they checked the river behind the Riverfront Seafood Company, a site where local birders regularly look for various waterbirds. They alerted other local birders who converged on the scene before sunset and observed the duck. It was seen daily through 13 March 2013 by many birders, often at very close range. While this tameness concerned some observers, Madge and Burn (1988:265) state that this species is "often fairly approachable". After an apparent absence, it was observed again on 24 April and 8-11 May.

This was a small, dark, chocolate-brown diving duck. The small rounded head had three white spots on each side: a teardrop-shaped spot below the eye, a smaller round spot above the lores, and an oval spot near the ear coverts. The bill was rather small and blackish. The wings were all dark. Its flight was rapid and low over the water. The overall color and head spotting were similar to that of a female Surf Scoter (*Melanitta perspicillata*), but this bird was smaller, had a much smaller bill, and had currents to forage with periods of rest on the shore. The section of the river favored by the duck was shallow and rocky with the strongest currents occurring during the daily releases from the Fort Patrick Henry Dam, just a few miles upstream.

There are four previous records of Harlequin Duck in Tennessee:

- 8 January 1984 (2, shot by hunter) Norris Lake, Campbell County (Dubke and Dubke 1984, Nicholson and Stedman 1988); one specimen was deposited at the U.S. National Museum.
- 5 January 1985 (1, shot by hunter) Cheatham Lake, Cheatham County (Stedman 1985, Nicholson and Stedman 1988).
- 1 January - early February 2000 (1) weir below South Holston Dam, Sullivan County (Lewis 2000); a photo taken by Robert Biller was published in Knight (2008).
- 11 Feb 2000 (1) Chilhowee Lake, Blount County (Lewis 2000, Calhoon 2000).

The Harlequin Duck occurs in two disjunct populations, one primarily in northeastern North America and the other primarily in northwestern North America (Madge and Burn 1988). Generally preferring turbulent waters, these ducks nest along fast-flowing rivers and winter along rocky coastlines. The eastern population breeds in Canada from Baffin Island south through eastern Quebec and Labrador, but also in Greenland and Iceland where largely resident. Birds from the eastern population winter southward along the Canadian and U.S. coast to New York, are rare but regular south coastally to North Carolina, and are casual further south to Florida and the Gulf coast. They are also casual on the Great Lakes. The western population breeds in the northern Rocky Mountains, the Pacific Northwest, Alaska, and eastern Siberia. Within North America birds from this population winter southward coastally to central California.

Inland records in states near Tennessee are similarly rare. Kentucky has two records, one near Louisville and the other in Campbell County (Palmer-Ball 2003, Palmer-Ball and McNeely 2008). West Virginia has a single record in Summers County in the southern part of the state (Hall 1983). Two records from western Virginia were located near Radford and at Blacksburg (Rottenborn and Brinkley 2007). The only inland record for North Carolina was near Greensboro (Davis 2007). Two inland Georgia records were both from Douglas County, just west of Atlanta (Beaton et al. 2003).

My thanks to Brookie Potter and Jean Potter for promptly alerting others to their discovery, to management and staff of Riverfront Seafood Company for their hospitality, and to Rack Cross and Rick Phillips for posting regular updates of the bird's presence to state and local birding listservs.

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DOMINANCE DISPLAY BY JUVENILE RUBY-THROATED HUMMINGBIRD

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Ruby-throated Hummingbird (*Archilochus colubris*) territoriality and general aggression toward conspecific individuals within their feeding territory is generally known and well-documented (Bent, 1940; Johnsgard, 1983; Petelka, 1942; Robinson, Sargent, Sargent, 1996; Sargent, 1999; Wolf, 1969). Intruders usually flee but physical confrontations may occur that involve jabbing with beak or feet (Robinson, Sargent, Sargent, 1996). Agonistic body language includes wing-spreading and tail-fanning while perched and tail-fanning in flight (Petelka, 1942; Robinson, Sargent, Sargent, 1996; Robinson, Sargent, Sargent, 1996) and is accompanied by vocalizations (Johnsgard, 1983; Petelka, 1942). This aggression is generally understood to decline following the breeding season (Petelka, 1942; Robinson, Sargent, Sargent, 1996; Sargent, 1999). Face to face aerial confrontations may result in contact with the ground (Whittle 1937).

On the morning of 4 October 2013 at 1012 I had an opportunity to examine closely the behavior of two hummers whose dispute resulted in ground contact. At that time I had been watching two Ruby-throated Hummingbirds as they kept up a relentless conflict that lasted for more than fifteen minutes. It was easy visually to track the two individuals because of the lateness of the season, the low number of hummingbirds present and the diminishing occurrence of disputes during this stage of migration.

The prolonged conflict included face to face flight with the two individuals ascending high into the air and descending near to the ground. During these challenges, they were once observed on the ground within a few feet of my position and seen to rise again a few

seconds later. In one encounter they landed on a limb in close proximity to each other for an instant; they postured and emitted warning chirps before rising again in face to face aerial challenge. The aerial skirmishes included high speed arched dives while both birds were in flight, and the sounds of wing buzzing and snaps, similar to common sounds heard during agonistic challenges at nectar feeders.

Eventually, their conflict led to the ground again, with this landing occurring close enough to my position where I stood with camera in hand, to record what transpired.

A male juvenile with one prominent red gorget feather on his throat succeeded in pinning the other hummingbird to the ground. Once this was accomplished, he spread his wings horizontally, with tail flared and neck stretched tall, and turned his head slowly from side to side, as if displaying his dominance or victory. The photo images show the top bird's left foot on the right shoulder of the downed bird. Though grass partially obscures the view, the top bird's right foot is visible in the head area of the downed bird and appears to be positioned at the base of the maxilla.

Photo by Vickie L. Henderson

While holding the downed bird firmly in place, with wings spread and tail fanned, the top hummer alternately shifted his weight from foot to foot in a "kneading" pattern, his body shifting with the movement. The pace of this movement was steady and rhythmical, similar to the steady rhythm of kneading dough. While he was engaged in this alternating movement, he continued to turn his head from side to side in an apparent watch over his environment, with no abruptness or hurry in these head movements. This behavior and pin-down lasted approximately a full minute. No audible sounds were emitted by either bird during this period.

The pinned bird was positioned with throat and stomach down, and was not seen to move his head during the grounded period. The bird did curve its back and move its right wing in an effort to struggle free. When the top bird lifted off I walked over to look at the ground, fully expecting to see a dead or injured hummingbird. Much to my relief the grounded bird had also flown.

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2013 TENNESSEE FALL BIRD COUNTS

Compiled by Ron Hoff
282 Hackworth Lane, Clinton, TN 37716

This summary reports all of the Tennessee Fall Bird Counts. Data for the North American Migration Count is no longer being collected so those counts will now be included with the traditional Fall Counts. This year 149 observers participated in nine counts across the state and recorded a total of 179 species. The weather this year was varied with several counts experiencing heavy rains. Temperatures ranged from a brisk 43° F in Elizabethton to a pleasant 80° F in Shelby County.

An Anhinga in Shelby County was the most unusual species on this year's count. Other highlights include Ruffed Grouse, Cattle Egret, American Golden-Plover, Least Tern, Northern Saw-whet Owl, Merlin, Peregrine Falcon, Scissor-tailed Flycatcher, Sedge and Marsh wrens, 30 species of warblers, Henslow's and Lincoln's sparrows, Baltimore Oriole and Pine Siskin. Loggerhead Shrikes continued to be scarce, being found this year only in White County.

COUNTY SUMMARIES

(F/Y = feeder/yard watcher)

Anderson County – 21 September: 0800-1000; 1330-1730. Weather: heavy rain; 63-68° F. Observers: Doug Bruce, Melinda Fawver, Carole Gobert, Ron Hoff (compiler: 282 Hackworth Lane, Clinton, TN 37716: aves7000@bellsouth.net) and Dollyann Myers.

Blount County – 21 September; 0615-1920. Weather: rain most of the day; 62-68° F. Observers: Jean J. Alexander (compiler: 3908 Riverview Drive, Maryville, TN 37804; jjadmj@yahoo.com), Tiffany Beachy and class participants, Suzanne Bielenberg, Warren Bielenberg, Fae Burkhart, Dawn Dextraze, James B. Fitzgerald, Marian D. Fitzgerald, Tom E. Fitzgerald, Kim J. Henry, Stephen P. Henry, Thomas D. Howe, David M. Johnson, Karen J. Petrey, Ann D. Tallent and June D. Welch.

Elizabethton – 28 September; 0430-1930. Weather: clear to partly cloudy; wind light and variable; 43-77° F. Observers: Fred Alsop, Jim D. Anderson, Jerry Bevins, Dallas Brooks, Kevin Brooks, Paul Carroll, Craig Carter, Gil Derouen, Diane Draper, Glen Eller, Harry

Lee Farthing, Paul Haynes, Don Holt, Mark Hopey, Reece Jamerson, Caitlin King, David Kirschke, Rick Knight (compiler: 804 N. Hills Drive, Johnson City, TN 37604; rknight8@earthlink.net), Roy Knispel, Tom Laughlin, Gary Laun, Mary Ann Laun, Richard Lewis, Vern Maddux, April Mattes, Joe McGuiness, Tom McKaig, Teddy McManus, Tom McNeil, Charles Moore, Cathy Myers, Eric Noblet, Kathy Noblet, Brookie Potter, Jean Potter, Nancy Sarvis, Chris Soto, Bryan Stevens, Kim Stroud, Gary Wallace and John Whinery.

Knoxville – 29 September; 0615-1830. Weather: cloudy; wind SW at 2-12 mph; 61-71° F. Fish Crow and Henslow's Sparrow were both new species for this count. Observers: Frank Bills, Sharon Bostick, Gail Clendenen, Steve Clendenen, K. Dean Edwards (compiler: 1615 Meadow Chase Lane, Knoxville, TN 37931; kde@angst.engr.utk.edu), Carole Gobert, Paul Hartigan, Tom Howe, Susan Hoyle, Kristine Johnson, Tony King, Denise Nauman, Charles P. Nicholson, Michael Ryon and Chris Welsh.

Montgomery County – 21 September; 0630-1145. Weather: clear; wind NNW 4-9 mph; 62-69° F. Observers: Daniel Moss (compiler: 1028 Ironworker's Road, Clarksville, TN 37043; dmoss5@earthlink.net) and Rick Shipkowski.

Nashville – 21 September; 0400-1830. Weather: rain to partly cloudy; wind NW 0-5 mph; 53-76° F. Observers: Rachael Anderson, Seth Benge, Scott Block (co-compiler), Susan Bradfield, Trae Bradfield, Jean Buchanan, Ed Byrne, Phillip Casteel, Clay Collins, Richard Conners, Francis Fekel, Bill Franks, Heather Gallagher, Mark Hackney, Barbara Harris, Bob Ingle, Camille Monohan, Ken Oeser, David Olmstead, Ann Paine, Amy Potter, Polly Rooker, Cyndi Routledge, Steve Routledge, Ed Schneider, Sarah Scott, Shelia Shay, Danny Shelton, Chris Sloan, Michael Smith, Joshua Stevenson, Sabin Thompson, Chloe Walker, Joanna Walker, Thomas Walker, Linnann Welch and Mary Zimmerman. Non-participating compiler: Jan Shaw (5019 Timberhill Drive, Nashville, TN 37211; JanKShaw@gmail.com).

Perry County - 21 September; 0500-1915. Weather: cloudy early; 58-78° F. Observers: Beulah Beachy, Chad Beachy, Rose Beachy, Hanna Gammin, Hope Gammin, Alfred Mast, Freemen Miller, Cheyenne Schrock, Leo Schrock, Ruben Stoll (compiler: 899 Miller Road, Centreville, TN 37033; birdhunterrws@gmail.com), Victor Stoll, Alan Troyer and Henry Troyer.

Shelby County – 14 September; 0700-1630. Weather: clear; 60-80° F. Observers: David Blaylock, Betty Blaylock, Chad Brown, Judy Dorsey, Margaret Jefferson, Nick Landers, Brett Lawson, Sam Lawson, Larry McPherson, Gaynell Perry, Dick Preston (compiler: 261 Sassafras Circle, Munford, TN 38058; dickpreston@bigriver.net), Virginia Reynolds, Allen Sparks, Ed Thomas Martha Waldron and Jay Walko.

White County – 21 September; 0430-1702. Weather: rain; wind 0-5 mph; 61-68° F. Observers: Douglas A. Downs (compiler: 403 Gillen Drive, Sparta, TN 38583; douglas_downs@hotmail.com), Judy C. Fuson, Nancy S. Layzer, Edmund K. LeGrand, Michael P. O'Rourke, Thomas M. Saya, Stephen J. Stedman, Carole D. Williams and Winston A. Walden.

2013 Fall Counts	Anderson Co	Blount Co	Elizabethton	Knox Co	Montgomery Co	Nashville	Perry Co	Shelby Co	White Co	Totals
	21-Sep	21-Sep	28-Sep	29-Sep	21-Sep	21-Sep	21-Sep	14-Sep	21-Sep	
Black-bellied Whistling-Duck	-	-	-	-	-	-	-	29	-	29
Canada Goose	82	142	1082	159	3	337	1	258	121	2185
Wood Duck	-	18	21	17	12	35	13	12	144	272
Mallard	81	142	228	27	-	189	-	98	15	780
Blue-winged Teal	1	7	24	-	36	809	1046	11	529	2463
Northern Shoveler	-	-	-	-	-	7	7	33	-	47
Green-winged Teal	-	-	-	-	-	-	1	-	-	1
Northern Bobwhite	-	-	8	-	-	-	-	-	-	8
Ruffed Grouse	-	-	4	-	-	-	-	-	-	4
Wild Turkey	7	66	96	25	1	64	41	41	109	450
Common Loon	-	-	3	-	-	-	-	-	-	3
Pied-billed Grebe	-	-	-	2	9	3	9	1	-	24
Double-crested Cormorant	2	3	9	31	-	10	14	18	2	89
Anhinga	-	-	-	-	-	-	-	1	-	1
Great Blue Heron	3	12	45	27	1	27	95	11	13	234
Great Egret	-	-	3	2	-	16	49	10	2	82
Snowy Egret	-	-	-	-	-	-	1	5	-	6
Little Blue Heron	-	-	-	-	-	-	7	6	1	14
Cattle Egret	-	-	-	-	-	-	-	8	-	8
Green Heron	1	1	5	1	-	8	-	2	6	24
Black-crowned Night-Heron	-	-	1	1	-	11	-	-	-	13
Yellow-crowned Night-Heron	-	2	-	-	-	2	-	-	-	4
Black Vulture	10	-	50	4	9	153	43	15	20	304
Turkey Vulture	2	5	183	12	11	108	289	27	85	722
Osprey	-	-	16	2	-	2	7	-	-	27

2013 Fall Counts	Anderson Co	Blount Co	Elizabethton	Knox Co	Montgomery Co	Nashville	Perry Co	Shelby Co	White Co	Totals
Bald Eagle	-	-	7	2	-	3	5	-	-	17
Northern Harrier	-	-	2	-	1	-	-	-	-	3
Sharp-shinned Hawk	-	-	35	1	-	1	1	-	2	40
Cooper's Hawk	-	3	7	2	-	3	1	-	4	20
Red-shouldered Hawk	-	3	2	5	-	7	4	10	18	49
Broad-winged Hawk	-	2	7	-	-	1	6	1	1	18
Red-tailed Hawk	-	3	30	11	-	23	9	9	9	94
Sora	-	1	3	-	-	-	-	-	-	4
American Coot	-	-	-	1	-	-	-	-	-	1
Black-necked Stilt	-	-	-	-	-	-	-	1	-	1
American Golden-Plover	-	-	-	-	-	-	-	3	-	3
Killdeer	21	27	73	64	1	39	21	256	91	593
Spotted Sandpiper	-	-	2	-	1	13	30	-	1	47
Solitary Sandpiper	-	2	-	1	-	14	4	4	4	29
Greater Yellowlegs	-	-	-	-	-	-	1	3	-	4
Stilt Sandpiper	-	-	-	-	-	-	-	12	-	12
Least Sandpiper	-	-	-	-	-	-	4	5000	-	5004
Pectoral Sandpiper	-	-	-	-	-	-	-	7	-	7
Semipalmated Sandpiper	-	-	-	-	-	-	-	12	-	12
Western Sandpiper	-	-	-	-	-	-	-	4	-	4
Wilson's Snipe	-	-	4	-	-	-	-	-	-	4
Ring-billed Gull	-	-	-	-	-	-	6	-	-	6
Least Tern	-	-	-	-	-	-	2	-	-	2
Caspian Tern	-	-	-	-	-	2	8	-	-	10
Rock Pigeon	75	38	297	279	-	89	2	142	96	1018

2013 Fall Counts	Anderson Co	Blount Co	Elizabethton	Knox Co	Montgomery Co	Nashville	Perry Co	Shelby Co	White Co	Totals
Eurasian Collared-Dove	-	5	4	-	-	5	2	25	44	85
Mourning Dove	70	332	331	242	5	143	61	255	863	2302
Yellow-billed Cuckoo	-	-	-	-	-	3	-	12	-	15
Eastern Screech Owl	-	3	18	4	-	3	4	-	3	35
Great Horned Owl	-	-	11	1	-	3	2	1	1	19
Barred Owl	-	1	8	-	-	8	4	2	-	23
Northern Saw-whet Owl	-	-	1	-	-	-	-	-	-	1
Common Nighthawk	-	-	5	-	-	2	2	2	-	11
Chimney Swift	3	4	310	139	-	498	35	210	12	1211
Ruby-throated Hummingbird	8	23	15	13	-	31	17	23	27	157
Belted Kingfisher	4	5	24	17	2	13	9	2	2	78
Red-headed Woodpecker	-	1	1	-	1	7	6	15	2	33
Red-bellied Woodpecker	5	19	79	63	6	75	10	41	19	317
Yellow-bellied Sapsucker	-	-	12	1	-	-	1	-	-	14
Downy Woodpecker	4	12	34	38	4	49	6	27	12	186
Hairy Woodpecker	-	1	14	7	1	7	2	-	1	33
Northern Flicker	-	7	44	53	3	10	-	6	14	137
Pileated Woodpecker	-	9	24	6	-	12	4	16	10	81
American Kestrel	-	3	6	3	3	16	11	1	38	81
Merlin	-	-	2	-	-	-	-	-	-	2
Peregrine Falcon	-	1	1	-	-	-	2	-	-	4
Olive-sided Flycatcher	-	1	-	-	-	1	-	-	-	2
Eastern Wood-Pewee	4	3	15	29	2	35	11	37	25	161
Yellow-bellied Flycatcher	-	2	1	-	-	1	-	-	-	4
Acadian Flycatcher	-	-	-	-	-	-	3	16	-	19

2013 Fall Counts	Anderson Co	Blount Co	Elizabethton	Knox Co	Montgomery Co	Nashville	Perry Co	Shelby Co	White Co	Totals
Willow Flycatcher	-	-	-	-	-	1	-	-	-	1
Least Flycatcher	-	-	1	-	-	-	-	1	-	2
Empidonax sp.	-	1	3	2	-	-	-	-	1	7
Eastern Phoebe	6	9	57	30	1	27	20	8	51	209
Great Crested Flycatcher	-	-	-	1	-	-	-	1	2	4
Eastern Kingbird	-	2	1	-	-	3	9	-	1	16
Scissor-tailed Flycatcher	-	-	-	-	-	3	-	-	-	3
Flycatcher sp.	-	-	-	-	-	1	-	-	-	1
Loggerhead Shrike	-	-	-	-	-	-	-	-	3	3
White-eyed Vireo	2	-	3	10	4	35	16	89	12	171
Yellow-throated Vireo	-	-	5	2	1	2	5	10	4	29
Blue-headed Vireo	-	-	37	1	-	1	-	-	4	43
Warbling Vireo	-	-	-	1	-	-	-	2	-	3
Philadelphia Vireo	-	-	3	1	-	2	1	3	-	10
Red-eyed Vireo	-	1	3	4	1	3	4	22	2	40
Blue Jay	11	137	511	368	11	215	43	26	139	1461
American Crow	77	97	384	303	20	205	140	43	381	1650
Fish Crow	-	-	-	4	-	-	-	-	-	4
Common Raven	-	-	21	-	-	-	-	-	-	21
Tree Swallow	-	-	61	15	-	1	-	-	-	77
Northern Rough-winged Swallow	-	5	-	3	2	-	16	10	2	38
Barn Swallow	-	-	4	-	-	1	2	-	-	7
Carolina Chickadee	11	46	150	118	3	234	39	29	45	675
Tufted Titmouse	9	41	93	72	5	112	37	53	68	490
Red-breasted Nuthatch	-	-	5	-	-	-	-	-	-	5

2013 Fall Counts	Anderson Co	Blount Co	Elizabethton	Knox Co	Montgomery Co	Nashville	Perry Co	Shelby Co	White Co	Totals
White-breasted Nuthatch	3	5	44	20	2	67	2	35	12	190
Brown-headed Nuthatch	-	1	-	4	-	-	-	-	2	7
Brown Creeper	-	-	1	-	-	-	-	-	-	1
House Wren	-	-	3	3	-	-	-	-	-	6
Winter Wren	-	-	2	-	-	-	2	-	-	4
Sedge Wren	-	-	-	-	-	1	-	-	-	1
Marsh Wren	-	-	1	1	-	-	-	-	-	2
Carolina Wren	8	77	157	146	9	156	25	81	61	720
Blue-gray Gnatcatcher	-	-	1	-	-	6	7	13	3	30
Golden-crowned Kinglet	-	-	5	-	-	1	-	-	-	6
Ruby-crowned Kinglet	-	-	17	2	-	-	-	-	1	20
Eastern Bluebird	18	82	201	103	2	153	71	13	214	857
Veery	-	-	2	3	-	2	-	1	-	8
Gray-cheeked Thrush	-	1	10	6	-	6	2	-	-	25
Swainson's Thrush	-	9	65	35	4	35	7	9	-	164
Wood Thrush	-	3	21	7	-	1	1	3	-	36
Thrush sp.	-	-	-	2	-	-	-	-	-	2
American Robin	-	60	671	150	-	205	66	4	203	1359
Gray Catbird	2	12	37	59	1	15	7	2	4	139
Brown Thrasher	2	8	10	32	2	32	1	3	17	107
Northern Mockingbird	11	53	107	127	4	99	39	35	60	535
European Starling	125	726	1666	713	34	1306	245	509	2480	7804
American Pipit	-	-	2	1	-	-	-	-	-	3
Cedar Waxwing	62	2	304	264	-	48	2	2	10	694
Ovenbird	-	-	4	-	-	3	1	-	-	8

2013 Fall Counts	Anderson Co	Blount Co	Elizabethton	Knox Co	Montgomery Co	Nashville	Perry Co	Shelby Co	White Co	Totals
Worm-eating Warbler	-	-	-	-	-	-	3	-	-	3
Northern Waterthrush	-	1	2	1	-	3	1	-	-	8
Golden-winged Warbler	-	-	-	-	-	3	1	-	1	5
Blue-winged Warbler	-	-	-	-	-	2	1	-	1	4
Black-and-white Warbler	-	-	2	2	1	11	1	7	4	28
Prothonotary Warbler	-	-	-	-	-	-	-	1	-	1
Tennessee Warbler	1	1	56	11	-	33	14	17	10	143
Orange-crowned Warbler	-	-	-	1	-	-	1	-	-	2
Nashville Warbler	-	1	-	-	-	-	1	-	-	2
Kentucky Warbler	-	-	-	-	-	-	-	1	-	1
Common Yellowthroat	-	1	12	23	2	45	2	4	13	102
Hooded Warbler	1	4	3	1	-	-	1	2	4	16
American Redstart	3	4	27	29	2	41	7	13	5	131
Cape May Warbler	-	1	4	1	-	-	-	-	-	6
Northern Parula	1	1	5	2	2	5	13	25	-	54
Magnolia Warbler	3	4	17	50	-	63	1	8	21	167
Bay-breasted Warbler	-	-	6	5	-	3	1	1	1	17
Blackburnian Warbler	-	-	4	5	-	-	-	-	3	12
Yellow Warbler	-	-	1	1	-	1	1	-	-	4
Chestnut-sided Warbler	-	1	10	9	1	12	-	4	2	39
Black-throated Blue Warbler	-	-	12	1	-	-	-	-	-	13
Palm Warbler	-	3	40	28	4	45	35	-	3	158
Pine Warbler	3	4	9	5	1	5	2	-	22	51
Yellow-rumped Warbler	-	4	-	-	-	6	-	-	1	11
Yellow-throated Warbler	-	-	2	4	-	3	2	-	5	16

2013 Fall Counts	Anderson Co	Blount Co	Elizabethton	Knox Co	Montgomery Co	Nashville	Perry Co	Shelby Co	White Co	Totals
Prairie Warbler	-	-	-	1	-	-	2	-	5	8
Black-throated Green Warbler	-	2	18	4	-	10	1	8	4	47
Canada Warbler	-	-	2	-	-	1	-	-	-	3
Wilson's Warbler	-	-	-	1	-	-	-	1	-	2
Yellow-breasted Chat	-	-	-	1	-	2	2	-	-	5
Eastern Towhee	8	11	69	36	3	42	-	11	6	186
Chipping Sparrow	8	16	50	2	1	25	72	1	190	365
Field Sparrow	2	25	11	39	-	108	17	-	12	214
Vesper Sparrow	-	-	1	-	-	-	-	-	-	1
Savannah Sparrow	-	-	2	6	-	-	1	-	-	9
Henslow's Sparrow	-	-	-	1	-	-	-	-	-	1
Song Sparrow	4	11	147	63	-	2	-	-	7	234
Lincoln's Sparrow	-	-	1	-	-	-	-	-	-	1
Swamp Sparrow	-	-	-	2	-	-	-	-	-	2
White-throated Sparrow	-	-	-	-	-	-	-	-	1	1
Dark-eyed Junco	-	-	34	-	-	-	-	-	-	34
Summer Tanager	2	-	1	7	5	22	21	17	8	83
Scarlet Tanager	2	5	19	5	1	6	2	-	22	62
Northern Cardinal	15	98	140	183	5	230	39	122	101	933
Rose-breasted Grosbeak	-	10	54	15	5	9	-	4	1	98
Blue Grosbeak	-	11	1	-	-	4	7	1	13	37
Indigo Bunting	-	3	18	136	3	37	67	6	35	305
Bobolink	-	-	31	1	-	-	-	-	-	32
Red-winged Blackbird	-	29	148	106	-	61	-	-	51	395
Eastern Meadowlark	3	7	36	10	13	29	8	6	48	160

2013 Fall Counts	Anderson Co	Blount Co	Elizabethton	Knox Co	Montgomery Co	Nashville	Perry Co	Shelby Co	White Co	Totals
Common Grackle	-	146	40	1296	-	78	1	1	-	1562
Brown-headed Cowbird	-	2	6	-	-	24	-	16	-	48
Baltimore Oriole	-	-	-	-	-	-	1	-	-	1
House Finch	-	17	30	40	-	15	2	7	4	115
Pine Siskin	-	-	4	-	-	-	-	-	-	4
American Goldfinch	15	26	183	60	6	47	9	27	24	397
House Sparrow	-	12	82	62	2	26	38	105	17	344
Total individuals	801	2748	9220	6161	275	6939	3107	8164	6773	44188
Total species	47	87	130	111	54	115	111	101	95	179
Observers	5	11	41	15	2	37	13	16	9	149
Parties	3	8	8	11	1	11	4	6	5	57
Party hours	8.8	40	90	53.78	5.25	63.25	16.25	35	38.75	351.08
Hours by car	3.1	18.5	-	10.75	3.25	24	8	9.5	32.75	109.85
Hours by foot	5.7	21.5	-	43.03	2	39.25	3.25	25.5	6	146.23
Hours by canoe or other	-	-	-	-	-	-	5	-	-	5
Miles by car	38.1	278.7	-	260	21	324	65	92	335	1413.8
Miles by foot	4.5	11.25	-	36.15	1	26	5	26	3	112.9
Miles by canoe or other	-	-	-	-	-	-	21	-	-	21
Hours owling	-	1.25	7	0.5	-	2.75	2.5	-	1	15
Miles owling	-	0.25	-	10	-	32.5	-	-	5	47.75
Feeder/yard watch observers	-	9	-	-	-	-	-	-	-	9
Feeder/yard watch hours	-	10.5	-	7.55	-	-	-	-	-	18.05

MINUTES OF THE 2013 FALL MEETING TENNESSEE ORNITHOLOGICAL SOCIETY 27 SEPTEMBER 2013 CLARKSVILLE, TENNESSEE

TOS Board of Directors Meeting

The TOS 2013 Fall meeting was held 27-29 September in Clarksville, Tennessee, hosted by the Warioto Chapter of the National Audubon Society. Field trips were offered to the following locations: the Zinc Plant, the Bicentennial Trail in Cheatham County, several birding areas in Montgomery County, grassland habitats in Robertson County, and the Fort Campbell Army base.

The Directors meeting was called to order by President Ron Hoff; a quorum was met. The minutes of the spring meeting were approved, with two exceptions. Under "New Business," the "Sandhill Crane Award Fund" was changed in order to read "Sandhill Crane Reward Fund." Dick Preston noted that on the last page of the minutes, the east Tennessee region should have been included and listed as having no Vice-President. Ron Hoff stated that since the spring meeting, Richard Lewis has agreed to serve as Vice-President.

REPORTS OF OFFICERS AND DIRECTORS-AT-LARGE

Vice-Presidents: No reports.

Directors-at-Large: No reports.

Treasurer: Mac McWhirter reported that the finances remain in sound financial condition. The investments of the Society have a fair market value of $289,958. As of 31 December 2012, the value stood at $262,354, so the funds have seen good growth over the first three quarters. Funds continue to be invested through Vanguard index and mutual funds.

It is the charge of the Treasurer to report on membership in the Society. One concern reported on two recent occasions has been the decline in subscriptions by libraries and institutions. This trend has continued because of the delay in publishing *The Migrant*. Our second largest subscription service for libraries, SWETS, has recently asked for refunds for issues they have not received in a timely manner. This type of request has never been received before and points to the need to bring *The Migrant* up to date in order to maintain its reputation as a quality scientific journal.

Curator/Web Page: No Report

The Migrant: No Report

The Tennessee Warbler: Editor Theresa Graham announced that the deadline for submissions to the next issue would be 31 October.

COMMITTEE REPORTS:

Bird Records Committee: No Report

Conservation Policy Committee: Dick Preston reported TOS is cooperating with the American Bird Conservancy in the quest to remove lead from ammunition.

Conservation and Research Funding Committee: Ron Hoff reported that Melinda Welton requests that Gregg Elliott be reinstated as a member of the Conservation Policy Committee.

Finance Committee: Chairman Susan Hollyday thanked Danny Gaddy, Jean Alexander, Dick Preston and Mac McWhirter for serving on the finance committee. There was no report at this time.

Collateral Materials: Donna Ward reported an amount of $25.00 received from the sale of patches, *The Migrant on CD,* and a copy of *The Checklist of the Birds of Tennessee.*

TN-Bird: No Report

NEW BUSINESS

Steve Routledge, Nashvile Chapter President, reported the spring 2015 meeting of TOS will be held at Montgomery Bell State Park. Danny Shelton is working on a multi-media presentation for the event.

TOS Logo: Ron Hoff proposed designing a new TOS logo. Members discussed the possibility of sponsoring a logo contest and awarding a cash prize to the person or group with the winning logo design. Mac McWhirter made the motion, with Martha Waldron, second, that we set an amount of $1,000 to be awarded to the person or persons who design the winning logo. The vote was unanimous to accept the decision.

Winter Meeting: Pickwick Landing State Park will be the location for the winter meeting on the last weekend of January.

Tennessee Breeding Bird Atlas: Ron noted that the last Tennessee Breeding Bird Atlas was completed 20 years ago and asked if there was interest in compiling a new edition. The proposal was discussed, with the consensus being that there were not enough participants at this time and perhaps conducting forays would be more productive.

Scott Somershoe announced that he and Chris Sloan are updating the book by John Robinson, *An Annotated Checklist of the Birds of Tennessee,* and stated that Chris will do the publishing work.

Donna Ward, Acting Secretary

ABSTRACTS FROM THE 2013 TOS FALL SYMPOSIUM

CHANGES IN AVIAN BODY SIZE IN RESPONSE TO CLIMATE CHANGE

Steven M. Badami and Erica Bluestein, Rhodes College, Memphis, Tennessee
Danny Bystrak, Patuxent Wildlife Resaerch Center, Laurel, Maryland
George E. Relyea, University of Memphis, Memphis, Tennessee
Michael D. Collins, corresponding author, collinsm@rhodes.edu

Mounting evidence indicates widespread changes in the Earth's climate and related changes in bird phenology and morphology. Based on Bergmann's rule, an eco-geographic principle relating larger body sizes with higher latitudes, increased temperatures are predicted to result in decreased avian body sizes, but more severe weather is predicted to select for greater fasting endurance and larger body sizes.

The direction of the morphological response would likely depend on the mechanism(s) that drive Bergmann's rule. We analyzed body size (wing length and body mass) data for >80,000 individuals of 68 species banded in the fall from 1980-2012 in Laurel, Maryland and examined regional climate data from 1895-2011. Mean summer (May-July) and winter (Dec-Feb) temperatures but not precipitation have increased since 1895. Mixed models demonstrate that neither wing length nor body mass varies with year, but both show a significant year by species interaction, indicating that changes in body size are species-specific. Wing length significantly increased in 12 species and declined in two. Body mass increased in five species and decreased in one.

Hotter summers resulted in increased wing length and mass, while colder winters were related to increased wing length and decreased body mass. Statistical models provide no evidence that body size changes vary with breeding range or with BBS or CBC population trends. Our findings do not support the hypothesis that avian body sizes have generally decreased or increased in response to climate change; rather, species (and ages and sexes) have responded to Avian malaria in East Tennessee.

AVIAN MALARIA IN EAST TENNESSEE

Alix E. Matthews, Alison A. Hanson and Jackson R. Roberts,
Rhodes College, Memphis,Tennessee
Vincenzo A. Ellis, University of Missouri, St. Louis, St. Louis, Missouri
Michael D. Collins, corresponding author, collinsm@rhodes.edu

Avian malaria is a disease caused by blood-borne parasites that are transmitted by insect vectors. The two most common genera are *Haemoproteus* and *Plasmodium*. Avian malaria can affect host fitness, host behavior, and community structure. We investigated avian malaria in four local communities in East Tennessee, sampling blood of 329 individuals from 41 species.

We extracted DNA and used PCR to amplify a section of the mitochondrial cytochrome b (cyt b) gene to detect *Haemoproteus* and *Plasmodium* infections. Cyt b genes were

sequenced and aligned using ChromasPro and Mega before a Bayesian phylogeny was generated. We discovered 20 distinct lineages, 12 *Haemoproteus* and 8 *Plasmodium*. Some hatch-year birds were infected, indicating that transmission occurs on the breeding grounds. The total prevalence of infections was 43%, and 13% of infected individuals had multiple infections. Generalized linear models show that across species, the prevalence of avian malaria varies with sexual dimorphism and increases with host mass and with two or more foraging height levels. Prevalence did not vary with nest type or height, body condition, survival, or between sites.

We conclude that prevalence rates vary across species with ecological traits. Interaction webs demonstrate that this system is complex, includes both specialist and generalist parasite lineages, and that host species vary in prevalence and richness of their haemosporidian parasites individualistically.

EFFECTIVENESS OF USING SILENT COUNTS AND AURAL STIMULI TO DETECT BARRED OWLS IN THE AREA SURROUNDING REELFOOT LAKE, TENNESSEE

Katrina D.R. Moeller, Heather Meadors and H. Dawn Wilkins
University of Tennessee at Martin, Martin, Tennessee

Barred Owls (*Strix varia*) are important nocturnal predators in forested ecosystems including bottomland swamps such as those found around Reelfoot Lake. Our goal was to compare silent counts to counts following playback of aural stimuli. Ten points were established and sampled twice a month from October to January in 2011-2012 and 2012-2013.

At each point, we conducted 5 and 10 minute silent counts followed by playback of Barred Owl territorial calls. We then conducted 5 and 10 minute post-playback counts. Ten minute silent counts detected about the same number of owls as 10 minute post-playback counts, but the rate of calling significantly increased after aural stimuli which could increase detection in low density areas. There was no monthly variation in the number of owls detected using 10 minute silent and 10 minute post-playback counts, but there was monthly variation in the rate of calling after aural stimuli.

During October and November, we detected significantly more calls post-playback than during silent counts, but during December and January the rate of calling was similar between the two methods. The increase in calling rate by month could indicate that aural stimuli may be more effective depending where owls are in their breeding cycle. We are currently comparing the number and types of calls in the Barred Owl's breeding cycle.

ROUND TABLE NOTE

Photo by Cyndi Routledge

ALBINO HUMMINGBIRD IN CLARKSVILLE - While relaxing on our side porch one late in the afternoon of 19 September 2013, hoping to see a few more migrating fall warblers come through the yard, I was intrigued by the appearance of what seemed to be a fairly large white moth hovering in the hemlock above our feeders. A quick peek through the binoculars revealed quite the surprise. A leucistic/albino hummingbird had arrived. This was a first for me, so I immediately ran inside and told Cyndi to get her camera and come take a look. Fortunately, our hummingbird cooperated. Not only did it stick around, it flew over to a nectar feeder that sits below a snowball hydrangea no more than 15 feet from our front porch. Cyndi was able to get several photos as it flew between the hydrangea and the salvia that borders our front porch steps. We were a couple of sponges just soaking up the spectacle, knowing it wouldn't likely last very long.

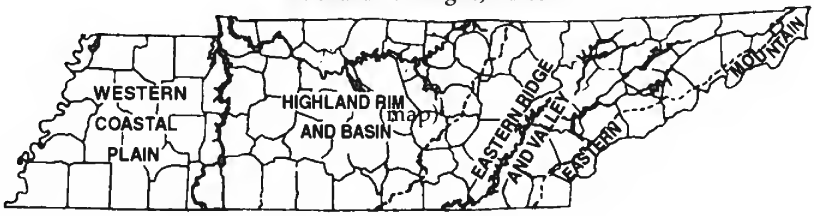
But it did. At least as far as migrating birds go, our little visitor stayed prominently visible for parts of five days. From that first Thursday afternoon, the 19th, through the following Monday morning, the 23rd, we watched as it interacted with Ruby-throated Hummingbirds (*Archilochus colubris*) battling for nectar at our feeders. The vocalizations it gave were that of a Ruby-throated hummingbird, also. Given the time of year that we saw it, we assumed it was a female or first-year male. In reality it was likely a first-year bird as the mortality rate for albino hummingbirds is probably near 100% within the first year. The Hummer Bird Study Group has had the opportunity to band several albino hummingbirds over the years. They have never re-banded one.

What differentiates an albino from a leucistic hummingbird? Generally speaking, an albino lacks the pigment melanin throughout the entire body, including the eyes, giving it an overall pink appearance. A leucistic bird lacks melanin primarily in the feathers and may include all feathers or just a few. We sent photos of this particular hummingbird to several knowledgeable birders and the overall consensus was that this was truly an albino hummingbird, a rare treat indeed.

Steve Routledge, Clarksville, TN

THE FALL SEASON

Richard L. Knight, Editor



1 August - 30 November 2013

Temperatures were generally within the normal range for the season, while rainfall varied a bit from region to region. High water levels in East Tennessee hampered shorebirding. Overall, migration seemed to go well. New high counts for the state were established for American White Pelican, Least Sandpiper and Chimney Swift. Two long-running fall banding stations in the eastern mountains continued operations this year with good results, including the banding of Northern Saw-whet Owls at both sites.

Waterfowl were pretty well represented, with reports of both North American whistling-ducks, four species of Arctic-nesting geese, Tundra and Trumpeter swans, an Eurasian Wigeon, all three American scoters and Long-tailed Duck. Three species of loons and five species of grebes were found in the state. Waders were highlighted by Roseate Spoonbill and White-faced Ibis. Avocets and Lesser Black-backed Gulls occurred in all four regions. Black-legged Kittiwake and Little Gull were notable. All these and others should have kept waterbird watchers contented.

A White-winged Dove and a returning Calliope Hummingbird graced Middle Tennessee this season. Flycatchers were also well represented with individual Say's Phoebe and Ash-throated Flycatcher, sightings of Yellow-bellied Flycatcher in all four regions and Olive-sided Flycatcher in two regions, plus single reports of Western Kingbird and Scissor-tailed Flycatcher. A small flock of Smith's Longspurs was found at Fort Campbell. The warbler flight seemed near average for recent years. The recent spike in reports of Clay-colored Sparrow continued with birds in Henry and Hamilton counties. Also notable were three reports of Nelson's Sparrow spread across two regions and a Harris's Sparrow in Rutherford County. Boreal irruptives were virtually absent statewide.

Standard Abbreviations

ad - adult
ba - banded
Co - County
Cr - Creek
ers - earliest reported sighting
et al. - and others
fide - reported by
im - immature
L - Lake
lrs - latest reported sighting
max - maximum count
m.ob. - many observers
Mtn - Mountain
R - River
SP - State Park
yg - young

WESTERN COASTAL PLAIN REGION - - The fall season was generally devoid of weather extremes. Temperatures and rainfall throughout the region averaged slightly above long-term norms. August was a bit drier than normal, but rain in September and October brought the season's total above average.

Shorebirds and flycatchers were well represented in both numbers and numbers of species. A Fulvous Whistling-Duck at the "Pits" in Shelby County was seen daily into November. Ensley also provided a new state high count of 15,000 Least Sandpipers. A Say's Phoebe near Reelfoot Lake in late November was a good find. In keeping with predictions of little southerly movement, northern irruptives were represented by just a single Red-breasted Nuthatch and a single Pine Siskin.

Waterfowl: **Black-bellied Whistling-Duck:** 8-31 Aug (2-3 broods of yg) Ensley ((MCT, SGS, JJW); present thru period (max, 146 in late Oct) Ensley (m.ob.). **Fulvous Whistling-Duck:** thru 13 Nov (1) Ensley (m.ob.). **Greater White-fronted Goose:** 26 Oct (47) Hatchie NWR, Haywood Co (RPF); 27 Oct (7) Britton Ford (TJW), ers. **Cackling Goose:** 29-30 Nov (3) Britton Ford (TJW / MCT), ers. **Tundra Swan:** 26 Nov (14) Hatchie NWR, Haywood Co (RPF); 29-30 Nov (3) Britton Ford (Bill Lisowsky / SE). **EURASIAN WIGEON:** 29-30 Nov (1 male) Britton Ford (TJW, DK, m.ob.). **Mallard x Northern Pintail:** 30 Nov (1) Big Sandy, Henry Co (RS). **Surf Scoter:** 20-29 Oct (2-3) Pace Point (RS,TJW, MCT). **Black Scoter:** 22 Nov (1 female) Britton Ford (SE); 30 Nov (1) Ensley (Sam Lawson). **Long-tailed Duck:** 11 Nov (1 female) Navy L, Shelby Co (GMc, photo); 24 Nov (2) near Pace Point (MCT). **Hooded Merganser:** 26 Nov (357) Halle Park L, Shelby Co (JJW), max.

Loon - Crane: **Red-throated Loon:** 24 Nov (1) near Pace Point (MCT). **Pacific Loon:** 8 Nov (1) Kentucky L, Benton Co (TJW). **Common Loon:** 30 Oct (1) Garner L, Shelby Co (Gaynell Perry), unusual. **Horned Grebe:** 10 Nov (2) Halle Park L, Shelby Co (JJW), unusual. **Red-necked Grebe:** 15 Nov (1) Paris Landing (RS, photo). **Anhinga:** 4 Aug (1) Mud L, Shelby Co (TJW); 14 Sep (1) Riverport Rd, Shelby Co (JJW). **American White Pelican:** 10 Aug (8) Gibson Co L (MAG); 3 Nov (100) Britton Ford (TJW), max. **American Bittern:** 13 Nov (1) TVA Lake, Shelby Co (JJW). **Little Blue Heron:** 17 Oct (1 im) TVA Lake, Shelby Co (SGS), late Co. **Black-crowned Night-Heron**: 3 Aug (1) Riverport Rd, Shelby Co (JJW). **Bald Eagle:** 14 Sep (2 ad) Herb Parsons WMA, Fayette Co (Eugene Smith), **ROSEATE SPOONBILL:** 23 Aug (1) Camden WMA, Benton Co (CF), undoubtedly the same bird seen across the river at Duck River Unit (see Highland Rim and Basin region). **Sandhill Crane:** 22 Nov (4) Britton Ford (SE).

Stilt - Tern: **Black-necked Stilt:** 17 Oct (1) Ensley (SGS), lrs. **American Avocet:** 31 Aug - 6 Sep / 28 Oct (1-2) Ensley (JJW, VBR,m,ob). **American Golden-Plover:** 1 / 6 Sep (2 / 7) Ensley (CAS, CW, MCT). **Lesser Yellowlegs:** 8 Nov (3) Pace Point (TJW), lrs. **Ruddy Turnstone:** 3 Aug (1) Ensley (MCT). **Sanderling:** 25 Aug (3) Ensley (SNM, NPM); 6 Sep (1) Mud Island, Shelby Co (MCT). **Western Sandpiper:** 2 Sep (17) Ensley (JJW), max. **Semipalmated Sandpiper:** 16 Aug (500) Ensley (SGS, SZ), max. **Least Sandpiper:** 16 Aug (15,000) Ensley (SGS, SZ), new high count in state. **Baird's Sandpiper:** 8 Aug - 6 Sep (1-2) Ensley (MCT / SNM, NPM). **Pectoral Sandpiper:** 16 Aug (1500) Ensley (SGS, SZ), max.

Dunlin: 20 Oct (6) Britton Ford (TJW, RS); 27-28 Oct (7-3) Ensley (DK, VBR); 3 Nov (3) Pace Point (TJW). **Stilt Sandpiper:** 6 Sep (12) Ensley (MCT), max. **Buff-breasted Sandpiper:** 1 / 6 Sep (1) Ensley (CAS, CW, MCT). **Wilson's Phalarope:** 31 Aug - 6 Sep (1) Ensley (CAS, FF, Danny Shelton, m.ob.). **Laughing Gull:** 24 Sep / 27 Oct - 3 Nov (1) Pace Point (RS / TJW, MCT). **Franklin's Gull:** 20 Oct (2-4) Pace Point (RS, TJW). **Lesser Black-backed Gull:** 29 Sep / 18 Oct - 8 Nov (1 ad / 1-3) Pace Pointm (TJW, MCT, RS). **Least Tern:** 2 / 16 Aug (312 / 555) Tiptonville Bar, Lake Co (MAG / SGS, SZ), max. **Black Tern:** 10 Aug (8) Gibson Co L (MAG). **Forster's Tern:** 30 Nov (4) Britton Ford (MCT), lrs.

Cuckoo - Falcon: **Black-billed Cuckoo:** 26 Aug (1) Meeman Shelby Forest SP (DDP); 22 Sep (1) Fort Pillow SP (DDP, MTOS). **Barn Owl:** 21 Nov (2 yg about a month old) Piperton, Fayette Co (fide Knox Martin), found in deer stand just days before deer season opened. **Rufous Hummingbird:** 1 Nov - Dec (1) Dyersburg, Dyer Co (Kathy Sellars, photo); 25-30 Nov (1) Fayette Co (Debbie Bruce, photo). **Merlin:** 24 Nov (1) Shelby Co (DDP). **Peregrine Falcon:** 8 Aug (1) Ensley (MCT).

Flycatcher - Siskin: **Olive-sided Flycatcher:** 16 Aug (1) Lake Co (SGS, SZ). **Yellow-bellied Flycatcher:** 28 Aug / 22 Sep (1) Fort Pillow SP (DDP, MTOS). **Least Flycatcher:** 26 Aug (1) Fort Pillow SP (DDP); 18 Sep (1) Meeman Shelby Forest SP (DDP). **SAY'S PHOEBE:** 25 Nov (1) Phillipy Rd, Lake Co (Bill Lisowsky). **Scissor-tailed Flycatcher:** 4 Aug (3 im) President's Island, Shelby Co (TJW). **Blue-headed Vireo:** 4 Nov (1) Shelby Farms (VBR), lrs. **Red-breasted Nuthatch:** 4 Nov (1) McKenzie, Carroll Co (Donna Ward), only report. **Sedge Wren:** 2 Nov (1) Shelby Farms (GMc). **Orange-crowned Warbler:** 13 Nov (1) Shelby Farms (Steve Ritt). **Mourning Warbler:** 25 Aug (1) Lower Hatchie NWR, Lauderdale Co (Van Harris). **Clay-colored Sparrow:** 17 Oct (1) near Pace Point (RS). **Vesper Sparrow:** 27 Oct (3) Pace Point (MCT). **Lark Sparrow:** 8 Sep (1) Ensley (David Blaylock). **Le Conte's Sparrow:** 27 Oct / 3 Nov (8 / 5) Pace Point (MCT, TJW); 2-16 Nov (1-13) Shelby Farms (GMc, MTOS). **Nelson's Sparrow:** 20 / 27 Oct (4 / 2) Pace Point (RS, TJW, MCT). **Lincoln's Sparrow:** 18 / 27 Oct (1 / 2) Pace Point (MCT); 18 Nov (1) Shelby Farms (VBR). **Scarlet Tanager:** 26 Oct (1) Memphis (Jim and Sue Ferguson). **Brewer's Blackbird:** 22 Nov (12) Camden WMA, Benton Co (RS). **Pine Siskin**: 27 Oct (1, at feeder) Brownsville, Haywood Co (RPF), only report.

Locations: Britton Ford, Henry Co; Ensley, Shelby Co; Fort Pillow SP, Lauderdale Co; Pace, Henry Co; Shelby Farms, Shelby Co; Meeman Shelby Forest SP, Shelby Co.

DICK D. PRESTON, 261 Sassafras Circle, Munford, TN 38058. dickpreston@rittermail.com

HIGHLAND RIM AND BASIN REGION - - The Middle Tennessee region had normal temperatures and precipitation for the fall season. Highlights include a record late Black-necked Stilt, the second White-winged Dove of the year in the region, a returning Calliope

Hummingbird, a small flock of Smith's Longspurs and a Harris's Sparrow. American Avocet and Upland Sandpiper were reported more frequently than usual. New state high counts were set for American White Pelican and Chimney Swift. Nelson's Sparrows were found in two locations, including one in the Nashville basin, the third there and was seen in the same place and same time as the Harris's Sparrow. Pied-billed Grebe with young was found in Davidson County.

Goose - Pelican: **Greater White-fronted Goose:** 17 Oct (32) Duck R Unit (RS), ers. **Snow Goose:** 18 Sep (2) Duck R Unit (CF), ers; 18 Nov (2 blue) Murfreesboro (CW). **Trumpeter Swan:** 22 Sep (1) Williamson Co (Jud Johnston), lingering bird. **American Black Duck:** 14 Sep (1) Radnor L (FF), ers. **Blue-winged Teal:** 21 Sep (425) Bell's Bend (SGS, CAS), max. **Northern Pintail:** 21 Sep (1) Lewis Co (WMP), ers. **Surf Scoter:** 23-24 Oct (1) Hohenwald wastewater plant, Lewis Co (WMP / RS). **Red-breasted Merganser:** 24 Nov (6) Percy Priest L, Rutherford Co (SGS, SZ). **Northern Bobwhite:** 11 Oct (48) Fort Campbell (DMo). **Pied-billed Grebe:** 21 Aug (4 yg) Old Hickory Dam (James Hurt, photo). **Red-necked Grebe:** 13 Nov (1) Center Hill L, DeKalb Co (Stephen Stedman, EKL). **Anhinga:** 12 Aug (1) Hardin Co (Damien Simbeck). **American White Pelican:** 29 Oct (1) Old Hickory L (TL); 13 Nov (5,000) Duck R Unit (RS), a new high count for the state.

Bittern - Crane: **American Bittern:** 16 Aug (1) Warren Co (SNM, NPM); 15 Nov (1) marsh on Walter S. Davis Blvd., Nashville (FF). **Least Bittern:** 22 Aug (1) Lewis Co (WMP). **Great Egret**: 19 Nov (2) Percy Priest WMA (SZ), lrs. **Little Blue Heron:** 4 Aug (2 im) Eagleville (Marnie Mitchell, photo); 10 Aug (15) Duck R Unit (SR, CR, NTOS); 21 Aug (1 ad) Lewis Co (WMP). **Cattle Egret:** 2 Sep (126) Coffee Co (SNM, NPM). **Yellow-crowned Night-Heron:** 4 Oct (1) Murfreesboro (TJW), lrs. **ROSEATE SPOONBILL:** from late Jul thru 6 Aug (1) Duck R Unit (CF, m.ob.). **Northern Harrier:** 18 Aug (1) Bark Camp Barrens sod farm (SNM, NPM), ers. Virginia Rail: 5 Oct (1) Duck R Unit (RS). **Sora:** 27 Aug / mid Sep (1 / dozens) Duck R Unit (CF), ers / max. **Sandhill Crane:** summering bird still present thru mid Sep at Duck R Unit (CF); 21 Nov (86) Warren Co (NPM, SNM); 25 Nov (78) Bell's Bend (FF).

Stilt - Tern: **Black-necked Stilt:** 24 Nov into Dec (1) Cross Plains, Robertson Co (TL), new late date in TN by a month (see winter report). **American Avocet:** 12 Aug (1) Hardin Co (Damien Simbeck); 3 Sep / 10 Oct / 3 Nov (1-3) Duck R Unit (CF, RS). **American Golden-Plover:** 10 Aug - 22 Sep (2-13) Bark Camp Barrens sod farm (SNM, NPM). **Willet:** 10 Aug (1) Duck R Unit (SR, CR, NTOS). **Lesser Yellowlegs:** 30 Oct (3) Percy Priest WMA (SGS), lrs. **Upland Sandpiper:** 8 Aug (1) Eagleville (SGS); 29 Aug (1) Duck R Unit (CF); 3 Sep (3) Bark Camp Barrens sod farm (SNM, NPM); 6 Sep (1) Bell's Bend (FF, Phillip Casteel). **Pectoral Sandpiper:** 7 Nov (9) Robertson Co (TL), lrs. **Dunlin**: 21 Oct (2) marsh on Walter S. Davis Blvd, Nashville (FF, Phillip Casteel); 28 Oct (2) Percy Priest WMA (SZ). **Buff-breasted Sandpiper:** 18 Aug (1) Bark Camp Barrens sod farm (SNM, NPM). **Short-billed Dowitcher:** 10 Aug (1) Duck R Unit (SR, CR, NTOS). **Long-billed Dowitcher:** 22 Oct (17) Eagleville (SGS). **Ring-billed Gull:** 20 Aug (1) Woods Reservoir, Franklin Co

(Charlie Dahan), unusually early. **Lesser Black-backed Gull:** 26-28 Nov (1 ad) Rutherford Co landfill (TJW, m.ob.). **Black Tern:** 8 / 10 Aug (16 / 30+) Duck R Unit (SGS / SR, CR, NTOS). **Common Tern:** 8 Aug (1) Duck R Unit (SGS).

Dove - Falcon: **White-winged Dove:** 29 Nov (1) Clarksville (Mike O'Malley). **Common Nighthawk:** 1 Sep (193) Warren Co (SNM); 1 Sep (100+) Robertson Co (TL); 2 Sep (189) Montgomery Co (Stanley York, Jr); max. **Chimney Swift:** 7 Sep (9,000) Tullahoma, Coffee Co (Ruth Luckado, m.ob.); 11 Sep (11,700) Davidson Co (Melinda Welton, John Noel) new high count for the state. **Ruby-throated Hummingbird:** 23 Nov (1 male) Williamson Co (RHC), lrs. **CALLIOPE HUMMINGBIRD:** 27 Oct thru Nov (1 ad male) Nashville (SGS, photo), returning from last winter when ba as HY-M (present 12 Oct 2012 into Apr 2013). **Rufous Hummingbird:** 30 Oct into Dec (1 ad male) DeKalb Co (TC, VC). **American Kestrel:** 22 Aug (21) Eagleville (SGS), max. **Merlin**: 2 Nov (3) Anderson Road Recreation Area, Davidson Co (Sharon Cardin). **Peregrine Falcon:** 14 Sep (1) Perry Co (RS); 8 Nov (1) Nashville (CAS).

Flycatcher - Longspur: **Olive-sided Flycatcher:** 16 Sep (1) Warren Co (SNM, NPM); 21 Sep (1) Warner Parks, Nashville fall count (FF, m.ob.). **Yellow-bellied Flycatcher:** 21 Sep (1) Shelby Bottoms, on Nashville fall count (fide JKS). **Least Flycatcher:** 30 Sep (1) Warren Co (SNM, NPM). **Eastern Kingbird:** 2 Oct (1) Radnor L (Kevin Bowden), lrs. **Western Kingbird:** 21 Aug - 15 Sep (1) Clarksville (Nita Heilman, SZ - photo). **Blue-headed Vireo:** 5 Aug (1) Lewis Co (WMP), very early. **Philadelphia Vireo:** 14 Sep (1) Perry Co (RS); 15 Sep (1) Lewis Co (WMP). **Horned Lark:** 8 Aug (21, including several juveniles) Eagleville (SGS). **Barn Swallow:** 27 Oct (1) Bell's Bend (Spencer Coffey), lrs. **Winter Wren:** 8 Oct (1) Murfreesboro (CW), ers. **Sedge Wren:** 27 Aug (7) Fort Campbell (DMo); 15 / 25 Oct (1) Warren Co (SNM, NPM). **Marsh Wren:** 15 / 25 Oct (1 / 2) Warren Co (SNM, NPM); 26 Oct (1) Bell's Bend (CW, NTOS). **Blue-gray Gnatcatcher:** 31 Oct (1) Percy Priest WMA (Ed Schneider), lrs. **Golden-crowned Kinglet:** 21 Sep (1) Cheatham Co, Nashville fall count (fide JKS), ers. **American Pipit:** 7 Nov (9) Warren Co (SNM, NPM). **Lapland Longspur:** 23 Nov (4) Williamson Co (CAS); 24 Nov (25) Robertson Co (TL). **SMITH'S LONGSPUR:** 26 Nov into Dec (5) Fort Campbell (DMo).

Warblers: **Louisiana Waterthrush:** 12 Aug (1) Radnor L (Kevin Bowden), lrs. **Northern Waterthrush:** 12 Oct (1) Barfield Crescent Park, Rutherford Co (Daniel Estabrooks), lrs. **Golden-winged Warbler:** 9 Sep (2) DeKalb Co (TC, VC); 14 Sep (1) Perry Co (RS); 18 / 26 Sep (1) Radnor L (RHC, NTOS / FF); 7 Oct (1) Radnor L (FF, JKS). **Tennessee Warbler:** 24 Oct (1) Lewis Co (WMP), lrs. **Orange-crowned Warbler:** 25 Oct (1) Lewis Co (WMP); 16 Nov (1) Old Hickory Dam (CW, NTOS). **Mourning Warbler:** 13 Sep (1) Lewis Co (WMP). **Blackburnian Warbler:** 2 Sep (1) Radnor L (FF), ers. **Yellow-throated Warbler:** 25 Nov (1) Clarksville (Nita Heilman), quite late. **Canada Warbler:** 7 Oct (1) Radnor L (FF), lrs. **Wilson's Warbler:** 18 Sep (1) Radnor L (RHC, NTOS).

Sparrow - Blackbird: **Vesper Sparrow:** 14 Oct (1) Percy Priest WMA (SZ). **Henslow's**

Sparrow: 5-18 Oct (1) Warren Co (SNM, NPM). **Nelson's Sparrow:** 15-31 Oct (1-2) Warren Co (SNM, NPM, photo - SGS); 30 Oct (1) Percy Priest WMA (SGS et al.). **Fox Sparrow:** 27 Oct (1) Davidson Co (TL), ers. **Lincoln's Sparrow:** 8 Oct (1) Murfreesboro (CW); 9 Oct (1) Warren Co (SNM, NPM); 26 Oct (1) Bell's Bend (CW, NTOS); 30-31 Oct (1-2) Rutherford Co (SGS et al.). **Harris's Sparrow:** 29-31 Oct (1 ad) Percy Priest WMA (Marnie Mitchell, photo, m.ob.). **White-crowned Sparrow:** 29 Sep (1) Montgomery Co (Stanley York, Jr.), ers. **Dark-eyed Junco:** 17 Oct (1) Radnor L (JKS), ers. **Rose-breasted Grosbeak:** 17 Oct (1) Radnor L (JKS), lrs. **Rusty Blackbird:** 5 Nov (4) Nashville (FF), ers. **Brewer's Blackbird:** 12 Nov (1) Duck R Unit (RS). **Purple Finch:** 24 Nov (1) DeKalb Co (TC, VC).

Locations: Bark Camp Barrens sod farm , Coffee Co; Bell's Bend, Davidson Co; Duck R Unit, unit of Tennessee NWR, Humphreys Co; Eagleville - Rutherford Co; Fort Campbell, Montgomery Co portion; Old Hickory L, Davidson Co; Percy Priest WM Rutherford Co; Radnor L, Davidson Co.

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CUMBERLAND PLATEAU / RIDGE and VALLEY REGION - - Temperatures were slightly below average for most of the season, with the first heavy frost and hard freezes occurring in late October. This year's trend of above average rainfall continued through August, but each of the following three months saw below normal amounts. The excessive rainfall this year kept regional lakes and ponds full through summer and well into autumn, greatly limiting shorebird habitat. For example, the water level in Douglas Lake did not fall to 985 ft. elevation, which marks the level of first suitable mudflat viewing conditions at Rankin Bottoms, until 19 September. This is considerably later than normal. Combined with reduced coverage, this resulted in a list of only 16 species of shorebirds for the season, well below the norm at this hotspot. Mast was bountiful this year, no doubt benefitting from the abundant rains through most of the growing season. Among various other abundant soft mast, wild grapes produced a heavy crop which frugivores devoured.

All three American scoters were observed in the region and two Eared Grebes were noted at Cove Lake. A small flock of White-faced Ibises at Chattanooga provided the second county record and the fourth for East Tennessee. A Swallow-tailed Kite was seen in Blount County. Shorebird highlights included American Avocets at three sites and Red-necked Phalaropes at Rankin Bottoms. Two adult Little Gulls were photographed at Chickamauga Lake, while a Lesser Black-backed Gull occurred on Upper Douglas Lake. An Ash-throated Flycatcher in Marion County was just the fifth in the state and second for East Tennessee. Hamilton County hosted a Clay-colored Sparrow. Boreal irruptives were limited to just three reports of Purple Finch.

Goose - Pelican: **Greater White-fronted Goose:** 23 Nov (2) Limestone (Jim Anderson); 30 Nov (1) Greene Co (DHM). **Snow Goose:** 12 Nov (4) John Sevier L (SHu). **Ross's**

Goose: 23-24 Nov (1) Hamilton Co (Libby Wolfe). **Tundra Swan:** 25 Nov (4) Rhea Co (Charles Murray). **Northern Shoveler:** 22 Sep (5) Rankin Bottoms (MBS), ers. **Redhead:** 23 Nov (350) L Tansi (EKL). **Ring-necked Duck:** 23 Nov (700) L Hiawatha, Cumberland Co (EKL). **Surf Scoter:** 23 Nov (4 im) L Tansi (EKL). **White-winged Scoter:** 23 Nov (1 male, 1 female) L Tansi (EKL). **Black Scoter:** 28 Oct (1 female) Austin Springs (RLK, m.ob.); 18 Nov (1 female) Cherokee L, Hamblen Co portion (Ben Britton); 23 Nov (2) Cove Lake SP, Campbell Co (Nell Moore). **Ruddy Duck:** 20 Oct (19) Upper Douglas L (MBS), ers. **Common Loon:** 21 Sep (2) Austin Springs (BKS), ers. **Eared Grebe:** 23 Nov (2) Cove Lake SP, Campbell Co (Nell Moore). **Western Grebe:** 24 Nov (1) Chickamauga L, Hamilton Co (Libby Wolfe). **Double-crested Cormorant:** 18 Oct (450+) Upper Douglas L (MBS), max. **American White Pelican:** 15 Sep - 20 Oct (1) Rankin Bottoms (Peter Capobianco, m.ob.); 11 Nov (26) Upper Douglas L (MBS); 18 / 25 Nov (13 / 34) Hiwassee Refuge, Meigs Co (Charles Murray).

Bittern - Crane: **American Bittern:** 26 Oct (1) Kyker Bottoms (TH, KTOS). **Little Blue Heron:** 4 Aug (1 im) Rankin Bottoms (MBS), only report. **Cattle Egret:** 5 Sep (1) Rankin Bottoms (MBS). **Green Heron:** 26 Oct (1) Austin Springs (BKS), lrs in northeast TN. Plegadis sp.: 27 Sep (1) Brainerd Levee (Nicholas Sir). **WHITE-FACED IBIS:** 8-11 Oct (5) Chattanooga (Kaye Fiorello, m.ob., photo by Tim Jeffers). **Swallow-tailed Kite:** 30 Aug / 1 Sep (1) Hwy 411, about 12 miles south of Maryville, Blount Co (Steve and Stacey Adair, Carolyn Snow). **Golden Eagle:** 14 Nov (1) Soddy Mtn, Hamilton Co (Bill Haley). **Virginia Rail:** 31 Oct (3) Standifer Gap Marsh (David Patterson); 2 Nov (1) Wal-Mart Distribution Center (DHM). **Sora:** 13 Oct / 2 Nov (1) Wal-Mart Distribution Center (DHM); 31 Oct (6) Standifer Gap Marsh (David Patterson). **Sandhill Crane:** 7 Oct (33) Bradley Co (John Champion), ers.

Shorebirds: **American Avocet:** 14 Sep (3) Rankin Bottoms (Sierra Club group fide MBS); 30 Sep (6) Steele Cr Park, Sullivan Co (Don Holt, Jeremy Stout); 27 Oct (1) Bible Refuge (DHM). **Black-bellied Plover:** 19 Aug (1) Camp Jordan, Hamilton Co (KAC, m.ob.). **American Golden-Plover:** 4 Sep (3) Eagle Bend (RDH, DMy). **Semipalmated Plover:** 28 Sep (18) Rankin Bottoms (MBS), max. **Spotted Sandpiper:** 8 Nov (1) Kingsport (Rick Phillips), lrs. **Greater Yellowlegs:** 7 Nov (2) Paddle Cr, Sullivan Co (JWC), lrs. **Willet:** 13 Aug (1) Austin Springs (RRK, Gil Derouen, Reece Jamerson). **Sanderling:** 19-25 Sep (1-4) Rankin Bottoms (MBS, RLK). **Western Sandpiper:** 28 Sep (4) Rankin Bottoms (MBS); 13 Oct (1) Austin Springs (RLK). **Least Sandpiper:** 11 Nov (27) Upper Douglas L (MBS). **Pectoral Sandpiper:** 1 Nov (1) Austin Springs (RLK); 7 Nov (1) Eagle Bend (RDH, DMy), lrs. **Dunlin:** 20 Oct / 11 Nov (6 / 35) Upper Douglas L (MBS); 23 Oct - 5 Nov (2-10) Austin Springs (RLK, m.ob.); 27 Oct (1) Bible Refuge (DHM); 15 Nov (15) Candies Cr, Bradley Co (David Chaffin). **Stilt Sandpiper:** 21-25 Sep (2) Rankin Bottoms (RLK, m.ob.). **Buff-breasted Sandpiper:** 22 Sep (7) Rankin Bottoms (DHM). **Short-billed Dowitcher:** 9 Aug (1) Eagle Bend (Sharon Monett, photo). **Red-necked Phalarope:** 25 Sep (2) Rankin Bottoms (DW).

Gulls - Terns: **Bonaparte's Gul**l: 30 Nov (1600) Douglas Dam, Sevier Co (Keith Watson, Craig Watson), max. **LITTLE GULL:** 25 Nov (2 ad) Chickamauga L, Hamilton Co (Rick Houlk, m.ob., photo - David Hollie). **Laughing Gull:** 6 Sep - 18 Oct (1) Upper Douglas L (DW, RLK, MBS, m.ob.). **Ring-billed Gull:** 26 Sep (165) Upper Douglas L (RLK), good number this early. **Lesser Black-backed Gull:** 7 Sep - 18 Oct (1 im) Upper Douglas L (DHM, RLK, MBS, m.ob.), 4th record. **Caspian Tern:** 6 Sep (9) Upper Douglas L (DW), max. **Black Tern:** 8 / 13 Aug (1) Austin Springs (RLK); 17 Aug (1) Nickajack L, Marion Co (KAC); 23 Aug (1) L Tansi (EKL); 21 Sep (2) Austin Springs (BKS). **Common Tern:** 11 / 13 Aug (1) Austin Springs (RLK); 22 Sep (1) Rankin Bottoms (DHM). **Forster's Tern:** 23 Aug (8) L Tansi (EKL); 3 Oct (8) John Sevier L (SHu).

Hummingbird - Longspur: **Rufous Hummingbird:** 4 Oct into Dec (1ad female, ba) Hamilton Co (Dan Williams, Mark Armstrong); 10-30 Nov (1 ad female, ba) Johnson City (Kathy Noblet, Mark Armstrong); 17 Nov into Dec (1 ad male) Knoxville (Billie Cantwell). **Red-headed Woodpecker:** 10 Aug (1 ad) Douglas Dam, Sevier Co (Keith Watson, Kevin Burke). **Merlin:** 16 / 18 Aug (1) Austin Springs (DW / RLK), new early date in NE Tenn; 3 Oct (1) Austin Springs (RLK); 19 Oct (1) Seven Islands Refuge, Knox Co (Chris Welsh); 21 Oct (1) Sullivan Co (DHM); 27 Nov (1) Knox Co (KDE). **Peregrine Falcon:** 4 Oct (1) Greeneville (DHM). **Yellow-bellied Flycatcher:** 16 Sep (1) Rankin Bottoms (DW); 23 / 28 Sep (1) Johnson City (DW / RLK); 27 Sep (1) Craven's House (KAC). **Least Flycatcher:** 8 Oct (1) Knox Co (KDE), lrs. **ASH-THROATED FLYCATCHER:** 7-14 Oct (1) Nickajack Cave Refuge, Marion Co (TLR, m.ob.). **Warbling Vireo:** 29 Sep (1) Seven Islands Refuge, Knox Co (KDE). **Philadelphia Vireo:** 23 Sep / 14 Oct (1) Craven's House (KAC); 23 Sep (1) Johnson City (DW); 26 Sep (1) Marion Co (TLR); 2 Oct (1) Knox Co (KDE). **Common Raven:** 28 Sep (2) near Tusculum, Greene Co (DHM); 30 Sep (1) Johnson City (RLK); 16 Oct (1) Conklin, Washington Co (RLK). **Tree Swallow:** 16 Oct (3500 +) Limestone (RLK), max. **Barn Swallow:** 26 Oct (1) Kingsport (RLK), lrs. **Sedge Wren:** 20 Oct (2) Brainerd Levee (KAC et al.). **Marsh Wren:** 14 Oct (1) Standifer Gap Marsh (KAC); 19 Oct / 2 Nov (2-4) Wal-Mart Dist. Center (DHM); 22-24 Oct (1) Austin Springs (RLK, m.ob.); 26 Oct (2) Kyker Bottoms (TH, KTOS). **Hermit Thrush:** 16 Oct (1) Washington Co (RLK), ers. **American Pipit:** 29 Sep (1) Knox Co, on fall count (fide KDE), ers. **Lapland Longspur:** 29 Nov (1) Limestone (DHM).

Warbler - Finch: **Northern Waterthrush:** 7 Sep (5) Rankin Bottoms (DHM), max; 23 Oct (1) Knox Co (KDE), late; 30 Oct (1) Hamilton Co (Lizzie Goodrich), lrs. **Golden-winged Warbler:** 14 / 22 Sep (1) Knox Co (KDE); 15 Sep (1) Craven's House (KAC); 15 / 23 Sep (1) Johnson City (RLK / DW); 16 Sep (1) Greenway Farm, Hamilton Co (David Aborn); 26 Sep (1) Marion Co (TLR). **Tennessee Warbler:** 31 Aug (1) Anderson Co (KDE), ers. **Orange-crowned Warbler:** 29 Sep (1) Knox Co, on fall count (fide KDE); 27 Oct (1) Kyker Bottoms (RDH). **Bay-breasted Warbler:** 2 Sep (1) Johnson City (TSM, CMy), ers. **Blackburnian Warbler:** 19 Aug (1) Norris Dam, Anderson Co (Shane Williams), ers. **Black-throated Green Warbler:** 18 Nov (1) Johnson City (Larry McDaniel), new late date in NE TN. by over 2 weeks and one of the latest ever in the state. **Canada Warbler:** 20 Aug (1) Craven's

House (KAC), ers. **Wilson's Warbler**: 16 Sep (1) Greene Co (DHM); 29 Sep (1) Knox Co, on fall count (fide KDE); 7 Oct (1) Craven's House (KAC). **Clay-colored Sparrow**: 15 Oct (1) Standifer Gap Marsh (Linda King, m.ob.). **Vesper Sparrow:** 5 / 30 Oct (1 / 2) Bible Refuge (DHM / DW); 26 Oct (2) Kyker Bottoms (TH, KTOS). **Grasshopper Sparrow:** 5 Oct (1) Greene Co (DHM), lrs. **Henslow's Sparrow:** 29 Sep (1) U.T. Plant Science Farm, Knox Co, on fall count (TH); 20 Oct (1) Brainerd Levee (KAC et al.). **Fox Sparrow:** 18 Nov (1) Johnson City (RLK), ers. **Lincoln's Sparrow:** 2 Oct (1) Austin Springs (RLK); 11 Oct (1) Seven Islands Refuge (Carole Gobert); 14 Oct (1) Standifer Gap Marsh (KAC); 16 Oct (1) Conklin, Washington Co (RLK); 26-27 Oct (1) Kyker Bottoms (TH, KTOS). **Blue Grosbeak:** 27 Oct (1) Kyker Bottoms (RDH, DMy), very late. **Dickcissel:** 28 Oct (1) Paddle Cr, Sullivan Co (RLK). **Purple Finch:** 12 Nov (1) John Sevier L (SHu); 15-16 Nov (1) Greeneville (DHM); 27 Nov (2) Knox Co (KDE); only reports.

Locations: Austin Springs, Washington Co; Bible Refuge, unit of Lick Creek Bottoms WMA, Greene Co; Craven's House, unit of Chickamauga and Chattanooga National Military Park, Hamilton Co; Eagle Bend, fish hatchery, Anderson Co; John Sevier L, Hawkins Co; Kyker Bottoms, Blount Co; L Tansi, Cumberland Co; Limestone, Washington Co; Rankin Bottoms, Cocke Co; Seven Islands Refuge, Knox Co; Standifer Gap Marsh, Hamilton Co; Upper Douglas L, Cocke Co; Wal-Mart Distribution Center, Greene Co.

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EASTERN MOUNTAIN REGION - - Temperatures during the period averaged above normal through October. However, November was cold, with the average temperature 3.4°F below normal. August and November were wetter than normal, while September and October were drier.

It was a good season for gulls at South Holston Lake with seven species observed in October including Black-legged Kittiwake, Franklin's Gull and Lesser Black-backed Gull. Other notable waterbirds included Black Scoyer, Red-necked Grebe, and American Avocet (two reports). An early White-crowned Sparrow was seen in Cades Cove.

Banding of songbirds was conducted at Big Bald Mountain and Whigg Meadows again this fall. Northern Saw-whet Owls were also banded at both sites, with a hawk banding station and hawkwatch operated at Big Bald. A Broad-winged Hawk banded at Big Bald was only the second banded in eleven years of hawk trapping at that location. Summaries for each station follow.

- Big Bald Mountain, Unicoi Co: 24 Aug - 26 Oct (2120 birds of 57 species banded), Mark Hopey, bander. Top species banded: Tennessee Warbler (576), Swainson's Thrush (330), Ruby-crowned Kinglet (234), Black-throated Blue Warbler (207), Dark-eyed Junco (185).
- Whigg Meadows, Monroe Co: 31 Aug - 28 Sep (554 birds of 32 species banded), Scott Somershoe, bander. Top species banded: Tennessee Warbler (108), Swainson's Thrush

(91), Black-throated Blue Warbler (57), Ovenbird (39), American Redstart (27).

- Big Bald Mountain hawk banding: Sep - Oct (110 birds of 7 species banded), Mark Hopey, bander. Species banded: Sharp-shinned Hawk (79), Cooper's Hawk (10), Merlin (9), Red-tailed Hawk (7), Peregrine Falcon (3), Broad-winged Hawk (1), American Kestrel (1).

Goose - Rail: **Greater White-fronted Goose:** 24 Oct into Dec (1) Great Lakes pond (Fred Alsop, m.ob.). **Blue-winged Teal:** 12 Sep (300) South Holston L (RLK), max; 1 Nov (12) South Holston L (RLK), lrs. **Northern Pintail:** 28 Oct (6) South Holston L (DW, RLK). **Greater Scaup:** 16 Nov into Dec (1) Wilbur L (RLK, BP, JP). **Black Scoter:** 28 Oct (1 female) South Holston L (DW). **Bufflehead:** 24 Oct (2) Wilbur L (BP, JP), ers. **Common Loon:** 11 Sep (3) Watauga L (BP, JP), ers. **Horned Grebe:** 15 Oct (4) South Holston L (RLK), ers. **Red-necked Grebe:** 16 Nov (1) South Holston L (JWC, BP, JP). **Green Heron:** 10 Nov (1) between Newport and Del Rio, Cocke Co (MBS), lrs. **Black-crowned Night-Heron:** 13 Sep (1) Holston Valley (Richard Lewis). **Broad-winged Hawk:** 22 Sep (491) Look Rock (TH, KTOS). **Sora:** 28 Sep (3) Shady Valley (GDE, RRK).

Table 1. Fall 2013 hawkwatch totals for Big Bald Mtn, Sep - Oct (MEH et al.).

species	count	species	count
Black Vulture	6	Broad-winged Hawk	809
Turkey Vulture	381	Red-tailed Hawk	101
Osprey	6	American Kestrel	9
Bald Eagle	7	Merlin	16
Northern Harrier	17	Peregrine Falcon	14
Sharp-shinned Hawk	220	Unknown	34
Cooper's Hawk	38		

Total: 387 vultures plus 1271 hawks and falcons = 1658.

Avocet - Tern: **American Avocet:** 31 Aug (3) Great Lakes pond (John Adams, m.ob.); 31 Oct - 1 Nov (1) Holston Valley (RRK, Gil Derouen, Reece Jamerson, m.ob.). **Black-bellied Plover:** 1 Oct (1) South Holston L (JWC). **American Golden-Plover:** 25 Oct (1) South Holston L (JWC). **Spotted Sandpiper:** 1 Nov (1) South Holston L (RLK), lrs. **Greater Yellowlegs:** 24 Aug (1) flying over summit of Roan Mtn (RLK), unusual location; 7 Nov (1) South Holston L (RLK), lrs. **Dunlin:** 25 Oct (2) South Holston L (JWC). **BLACK-LEGGED KITTIWAKE:** 28-29 Oct (1 im) South Holston L (RLK, DW, m.ob.), 4th record in NE Tenn, about the 15th in the state. **Bonaparte's Gull:** 28 Oct (5) South Holston L (DW, RLK), ers. **Laughing Gull:** 14 Oct (4 im) South Holston L (RLK, BP, JP); 15 Oct (1) Watauga L (David Kirschke). **FRANKLIN'S GULL:** 14 Oct (1 im) South Holston L (BP, JP, RLK), 1st record in NE TN **Ring-billed Gull:** 14 Oct (52) South Holston L (BP, JP, RLK), ers. **Lesser Black-backed Gull:** 14 Oct (1 im) South Holston L (RLK, BP, JP), 2nd record in NE TN. **Herring Gull:** 14 Oct (3) South Holston L (RLK, BP, JP), ers. **Caspian Tern:** 1

Aug / 1 Sep (1 / 2) South Holston L (JWC / TSM, CMy). **Black Tern:** 19 Aug / 10 Sep (1 / 8) South Holston L (RLK, RRK). **Common Tern:** 12 Sep / 14 Oct (13 / 6) South Holston L (RLK). **Forster's Tern:** 1 / 19 Aug (2 / 1) South Holston L (JWC, RLK).

Owl - Falcon: **Barn Owl:** 17 Oct thru end of season (1-2) Holston Valley (Richard Lewis), consistent calling while hunting every night. **Northern Saw-whet Owl:** 17 / 23 Sep (1 ba / 1 ba, both im) Whigg Meadow, Monroe Co (SGS); 28 Sep (1) Unaka Mtn, Unicoi Co (Joe McGuiness); Sep-Oct (7 ba, 1 recapture) Big Bald Mtn (MEH), the recapture was a bird banded at that location in summer 2012. ***Selasphorus* sp.:** 11-12 Oct (1) Simerly Cr (BKS). **Red-headed Woodpecker:** 23 Aug (1 ad, 1 im) Bluff Mtn, Sevier Co (Keith Watson, Kevin Burke); 14 / 23 / 29 Sep (1 each date) Roan Mtn (RLK), flying over; 19 Sep (1 im) Look Rock (Shane Williams). **Yellow-bellied Sapsucker:** 18 Sep (1) Shady Valley (RLK), ers at low elevation. **Merlin:** 19 / 29 Sep (1) Elizabethton (RLK, TSM, CMy); 24 Sep (1) Roan Mtn (Kathy Noblet); 28 Sep (1) Watauga R (GOW, BKS). **Peregrine Falcon:** 19 Aug (1) South Holston L (JWC); 8 / 10 Sep (1 ba / 2 ba) Big Bald Mtn (MEH); 22 Sep (1) Look Rock (TH, KTOS); 24 / 29 Sep (1) Roan Mtn (JWC, RLK); 28 Sep (1) Watauga R (GOW, BKS).

Flycatcher - Pipit: **Yellow-bellied Flycatcher:** 19 Sep (1) Elizabethton (RLK). **White-eyed Vireo:** 18 Oct (1) Elizabethton (RLK), lrs. **Warbling Vireo:** 25 Sep (1) Elizabethton (TSM, CMy), lrs. **Philadelphia Vireo:** 5 / 18 Sep (1) Elizabethton (DW); 10 Sep (1) Simerly Cr (BKS); 22 Sep (1) South Holston L (RLK); 23 Sep (2) Roan Mtn (RLK); 27 Sep (1) Shady Valley (RLK); 28 Sep (1) Mountain City, Johnson Co (TSM) plus (2) Carter Co (m.ob.), on Elizabethton fall count; good numbers. **Red-eyed Vireo:** 17 Oct (1) Elizabethton (DW), lrs. **Tree Swallow:** 13 Nov (1) South Holston R weir, Sullivan Co (RLK), lrs. **Marsh Wren:** 28 Sep / 9 Oct (1 / 2) Shady Valley (GDE, RRK / RLK). **Ruby-crowned Kinglet:** 10 Sep (1) Roan Mtn (RLK), ers. **Gray Catbird:** 24 Oct (1) Wilbur L (Fred Alsop); 10 Nov (2) Chota Refuge, Monroe Co (RDH, DMy, Frank Bills, Sharon Bostick), lrs. **American Pipit:** 28 Sep (2) Big Bald Mtn (MEH), ers.

Warblers: **Northern Waterthrush:** 29 Aug (2 ba) Big Bald Mtn (MEH), ers. **Blue-winged Warbler:** 26 Sep (1 ba) Big Bald Mtn (MEH). **Golden-winged Warbler:** 10 Sep (1) Carver's Gap on Roan Mtn (RLK); 25 Sep (1) Elizabethton (TSM, CMy). **"Brewster's Warbler":** 10 Sep (1) Simerly Cr (BKS). **Tennessee Warbler:** 28 Aug (1 ba) Big Bald Mtn (MEH), ers; 29 Oct (1) Shady Valley (RLK), lrs. **Orange-crowned Warbler:** 12 / 25 Oct (1 / 2) Elizabethton (DW); 29 Oct (3) Shady Valley (RLK). **Bay-breasted Warbler:** 10 Sep (1) Roan Mtn (RLK), ers. **Blackpoll Warbler:** 18 Sep (1) Shady Valley (RLK); 3 / 10 Oct (1 ba each day) Big Bald Mtn (MEH); rare in fall. **Yellow-rumped Warbler:** 24 Aug (1 juv.) Carver's Gap on Roan Mtn (RLK), suggestive of breeding; 7 Sep (1) Roan Mtn (RLK). **Prairie Warbler:** 18 Sep (1) Shady Valley (RLK). **Wilson's Warbler:** 4 Sep (1) Roan Mtn (DW); 19 Sep / 15-18 Oct (1) Elizabethton (DW / RLK). **Yellow-breasted Chat:** 22 Sep (1) Elizabethton (TSM, CMy); 26 Sep (2) South Holston L (RLK); lrs.

Sparrow - Siskin: **Vesper Sparrow:** 24 Sep (1) Round Bald on Roan Mtn (Kathy Noblet), lrs at breeding site; 28 Sep (1) near Elizabethton (GOW, BKS). **Fox Sparrow:** 29 Oct (1)

Shady Valley (RLK), ers. **Lincoln's Sparrow:** 27 Sep / 29 Oct (1 / 5) Shady Valley (RLK); 28 Sep (1) Great Lakes pond (BKS, GOW). **Swamp Sparrow:** 27 Sep (1) Shady Valley (RLK), ers. **White-crowned Sparrow:** 23 Sep (1 im) Cades Cove, Great Smoky Mtns National Park (Carolyn Snow), ers. **Summer Tanager:** 19 Aug (1) South Holston L (RLK). **Rose-breasted Grosbeak:** 23 Sep (160+) Roan Mtn (RLK), max. **Bobolink:** 18 Sep (1) Shady Valley (RLK). **Rusty Blackbird:** 15 Oct (1) Shady Valley (GDE, RRK), very early. **Red Crossbill:** 24 Aug - 29 Sep (2-5) Roan Mtn (RLK, m.ob.). **Pine Siskin:** 24 Aug - 29 Sep (1-4) Roan Mtn (RLK, m.ob.); 27 Nov (1) Wilbur L (BP, JP).

Locations: Big Bald Mtn, Unicoi Co; Great Lakes pond, Carter Co; Holston Valley, Sullivan Co; Look Rock, Foothills Parkway, Blount Co; Roan Mtn, Carter Co; Shady Valley, Johnson Co; Simerly Cr, Carter Co; South Holston L, Sullivan Co; Watauga L / R, both in Carter Co; Wilbur L, Carter Co.

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SE - Shawna Ellis
FF - Frank Fekel
CF - Clayton Ferrell
RPF - Robert P. Ford
MAG - Mark A. Greene
RDH - Ron D. Hoff
MEH - Mark E. Hopey
TH - Tom Howe
SHu - Susan Hubley
RLK - Richard L. Knight
RRK - Roy R. Knispel
TL - Tony Lance
EKL - Edmund K. LeGrand
GMc - Georges McNeil
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